AMERICAN AG INTERNATIONAL'S DELIVERABLES

RELATIVE TO

CONTRACT NO. NM-910-CT8-11

COLLECTION OF DATA AND PREPARATION OF ENVIRONMENTAL STATEMENT OF POTENTIAL ECOSYSTEM CHANGES ON STANDARD HABITAT SITES LAS CRUCES DISTRICT, BUREAU OF LAND MANAGEMENT

American Ag International, Inc.

P.O. Box 12397

Tucson, Arizona 85732

INTRODUCTION

American Ag International, in accordance with BLM contract NM-910-RFP-25---COLLECTION OF DATA AND PREPARE ENVIRONMENTAL STATEMENT OF POTENTIAL ECOSYSTEM CHANGES ON STANDARD HADITAT SITES---has completed and is submitting all requested information.

Information included within this report is as follows:

- o A vertebrate species occurrence list by Standard Habitat Site (SHS).
- o A plant species list composed of approximately 90-95% of the plant species making up the plant composition of each SHS.
- o A chart depicting: (a) the key vertebrate species for each SHS and the anticipated population changes when influenced by different degrees of utilization for varying periods of time; and (b) the SHSs which may evolve from current SHSs when subjected to different degrees of utilization for varying periods of time.
- o Lists of the potential plant communities and species compositions for each SHS.
- o A bibliography of all references made during the process of the contract.

A. VERTEBRATE SPECIES OCCURRENCE LIST BY STANDARD HABITAT SITE

This list includes species that are known to be present in the Las Cruces District, as well as species that may be present in the District, but as of yet have not been documented.

The SHSs in which species are found are indicated by numerals below the SHS column of the list. In addition to indicating the presence of the species in the SHSs, the numerals also reflect the relative quality of habitats provided by the SHSs for each species.

- o The numeral 1 represents the highest quality of habitat, while increasingly larger numerals represent relative decreases in habitat quality.
- o Since the population of a species is directly influenced by the quality of its habitat, these numerals should also be indicative of the relative populations of each species found in the SHSs (per given area).

Each species is listed by both its common and scientific name. Those species that were observed during the field inventory phase are denoted by an asterisk.

B. PLANT SPECIES LISTS

In order to obtain a good sample of the plant species composing each SHS, it was necessary to first analyze the range site composition of each SHS. This was accomplished by analyzing more than twelve hundred 200 step-point transects that the BLM range crews had completed as of December 10, 1978. Information obtained from the step-point transects indicate that most of the SHSs are composed of several different range sites. In many instances these SHSs are a complex intermix of several different potential plant communities.

To determine the plant species composition of each SHS, AAI obtained crown cover data from twenty 200 step-point transects for each SHS. From the crown cover data, the percent composition of the species making up the SHS was derived. However, in order to obtain an accurate sample of the plant species composition for each SHS, it was necessary to select 20 transects which were composed of the same proportional percentage of range sites as was each SHS. For example:

> The Larrea tridentata Hill SHS was found to be composed of 45% Igneous Hills and Mountain Range Site, 35% Limestone Hills Range Site, 10% Gravelly Sand Range Site, and 10% Gravelly Loam Range Site. Hence, of the twenty transects utilized to determine the species composition for the Larrea tridentata Hill SHS, 9 were selected from the Igneous Hills and Mountain Range Site, 7 from the Limestone Hills Range Site, 2 from the Gravelly Sand Range Site, and 2 from the Gravelly Loam Range Site.

Once the plant species compositions were determined for each SHS, those species that were found to compose from 90-95% of the total composition were utilized to develop the plant species lists.

- It should be noted that even though the plant species compositions were determined, they are not listed on the plant species lists. The percent compositions were not requested in the contract, hence were not included. The percent compositions were determined by AAI

in order to establish the general makeup of the SHSs and to insure that a minimum of 90% of the total plant species composition was listed for each SHS. Should the BLM desire the percent compositions for the species composing each SHS, they may be derived from the "raw" data that was utilized by AAI during the process of the contract.

* The relative percentages of range sites composing each SHS and the number of transects analyzed for crown cover within the range sites are listed in Appendix A.

** The plant species lists for the Malpais SHS and the Riparian SHSs were developed from only 6 and 4 transects, respectively. Therefore, these lists are probably incomplete. However, these were all of the transects that had been run in these SHSs as of December 10, 1978.

C. CHART

This chart depicts: (a) the key vertebrate species for each SHS and the anticipated population changes when influenced by different degrees of utilization for varying periods of time; and (b) the probable SHSs which will evolve from current SHSs when subjected to different degrees of utilization for various periods of time.

a) Key vertebrate species were selected on the basis of three factors: (1) limited tolerance to environmental change; (2) limited distribution dependent on environmental factors; and (3) declining population dependent on environmental factors. The particular factor(s) for which key species were selected are designated on the chart beside the common name of the key species. Population changes of the key species are indicated as: I - Increase in population; D - Decrease in population; S - Stable population; and N - Species no longer present.

b) As the SHSs are composed of anywhere from one to eleven different

range sites the chart is actually a simplification of many very complex interacting factors. Since each of the range sites have different potentials, several different changes within each SHS are possible. Hence, this chart should be viewed with the thought in mind that not all possible changes are indicated on the chart, but rather that the changes indicated are those that are most likely to occur on the majority of each SHS.

In order to clarify the successional changes indicated on the chart, each SHS is discussed as follows;

1. Larrea tridentata Rolling Upland (Latr Rup)

   According to Gardener (1951), much of the area within the Las Cruces District, which is presently occupied with creosotebush, was at one time a Plains Desert Grassland. It was predominantly a climax vegetation composed of black grama and its associates on the uplands, and tobosa and its associates in the shallow bottomland swales. This theory has also been supported by such noted ecologists as Clements (1934), Weaver and Clements (1938), and Clements and Shelford (1939). Bases upon this concensus, areas now dominated by shrubs represent a grazing disclimax or stages in primary succession. Due to a combination of influencing factors, the return of such creosotebush invaded areas to climax grasslands will at best be a long and slow process. Factors working against the return of creosotebush areas to grassland are:

   - As areas are invaded by creosotebush the ground cover is greatly reduced, thereby allowing significant

increases in soil erosion. In many such areas, the soil surface has eroded to the extent that only the desert pavement remains. This creates an environment very inhospitable to the reestablishment of grass species.

- o Throughout the southwestern portion of New Mexico, precipitation is very sporadic and is more often than not unfavorable to the reestablishment of grass species.
- o Once an area has been invaded by shrubby species, competition from the invading shrubs greatly reduces the chances of grasses becoming reestablished.
- o Selective grazing habits of livestock.

The opportunity for creosote invaded areas to return to grasslands is remote unless the sites receive assistance from man through forms of mechanical disturbance and reseeding.

2. Larrea tridentata Breaks (Latr Brks)

Beck (1978) states that it is very unlikely that areas described as being part of the Latr Brks SHS will change significantly due to the excessive erosion incurred on the steeper slopes of this SHS. The original potential to produce grasses has been greatly reduced by the loss of substantial amounts of topsoil.

It was Gardener's hypothesis (1951) that creosotebush composed a major portion of the climax vegetation found along the gravelly ridges as encountered in the Latr Brks SHS. This hypothesis can be further substantiated by the potential natural plant communities as described by the Soil Conservation Service (SCS) for the Gravelly Sand and Gravelly Range Sites (the range sites composing 78% of the Latr Brks SHS). The SCS has also designated creosotebush as composing a major portion of the climax vegetation of the plant community found in what has been designated as the Latr Brks SHS by the

BLM. The dominance of creosotebush in the Latr Brks SHS climax vegetation as well as in its present condition would tend to indicate that this SHS is one with very little vegetative potential. The combination of the low vegetative potential with the excessive erosion that this SHS has been subjected to leads to the conclusion that the Latr Brks SHS will not change in aspect within the next one hundred years.

3. Larrea tridentata Hill (Latr Hill)

(See Larrea tridentata Rolling Upland for explanation).

4. Mixed Shrub Rolling Upland (Mxsh Rup)

Vegetation that is presently designated by the BLM as composing the Mxsh Rup SHS was at one time predominantly a Plains Desert Grassland (Buffington and Herbel, 1965 from research conducted on the Jornada Experimental Range). The present domination by shrubs represents a grazing disclimax or primary successional change. Research indicates that the vegetation composing the Mxsh Rup is presently on a downward successional trend. Buffington and Herbel found that many areas on the Jornada Experimental Range exhibited the following downward successional trends:

- Plains Desert Grassland to mesquite-creosotebush type to a creosotebush type.
- Plains Desert Grassland to tarbush type to creosotebush-tarbush type to a creosotebush type.
- Plains Desert Grassland to tarbush-mesquite-creosotebush type to a creosotebush type.

As the intermediate vegetation types listed in the above downward successional sequence fit those of the Mxsh Rup SHS, it is highly probable that the Mxsh Rup SHS is moving toward

a predominantly creosotebush vegetation type. Under BLM classification this would be equivalent to the Larrea tridentata Rolling Upland SHS.

The period of time required for the Mxsh Rup SHS to regress to a Latr Rup SHS would be primarily dependent upon 2 factors: (1) the present relative condition of the plant community composing the Mxsh Rup SHS in relation to climax vegetation; and (2) the intensity of grazing to which areas within the Mxsh Rup SHS are subjected to.

- As different areas within the Mxsh Rup SHS are in different relative conditions, some areas will regress to a creosotebush vegetation type sooner than others. It may take an area in very poor condition only 20 years to reach a creosotebush vegetation type, whereas an area in good condition may take more than a hundred years.

- If an area is grazed heavily, the downward trend will be greatly enhanced and less time will be required to regress to the creosotebush vegetation type. If however, an area is rested or only lightly grazed, the present vegetation may stabilize, eventually reverse its trend, and return to a grassland. In some cases, if the relative condition of the plant community is poor and much of the topsoil has eroded, the area may continue to regress until reaching a creosotebush vegetation type, even if the area is given complete rest from grazing.

- Additional significant influencing factors are the soil texture and depth, and its erodibility and the distance from the seed source of the invading species, and the precipitation pattern in the area.

The return of shrub invaded areas within the Mxsh Rup SHS to the climax vegetation of a Plains Desert Grassland may take several hundred years. As forementioned, this long, slow process will be greatly affected by the degree of utilization of plant species and the present relative condition of the plant community in relation to climax

a predominantly creosotebush vegetation type. Under this classification this would be equivalent to the Larrea tridentata Rolling Typical ESD.

The period of time required for the Mesh Rup ESD to regress to a later Rup ESD would be primarily dependent upon 2 factors: (1) the present relative condition of the plant community comprising the Mesh Rup ESD in relation to climax vegetation; and (2) the intensity of grazing to which areas within the Mesh Rup ESD are subjected to.

- As different areas within the Mesh Rup ESD are in different relative conditions, some areas will regress to a creosotebush vegetation type sooner than others. It may take an area in very poor condition only 20 years to reach a creosotebush vegetation type, whereas an area in good condition may take more than a hundred years.

- If an area is grazed heavily, the downward trend will be greatly enhanced and less time will be required to regress to the creosotebush vegetation type. If however, an area is rested or only lightly grazed, the present vegetation may stabilize, eventually reverse its trend, and return to a grassland. In some cases, if the relative condition of the plant community is poor and much of the topsoil has eroded, the area may continue to regress until reaching a creosotebush vegetation type, even if the area is given complete rest from grazing.

- Additional significant influencing factors are the soil texture and depth, and its erodibility and the distance from the seed source of the invading species, and the precipitation pattern in the area.

The return of shrub invaded areas within the Mesh Rup ESD to the climax vegetation of a Plains Desert Grassland may take several hundred years. As forementioned, this long, slow process will be greatly affected by the degree of utilization of plant species and the present relative condition of the plant community in relation to climax

vegetation. Additional retarding factors are low and sporadic rainfall, the loss of topsoil to erosion, the extra competition from woody species presently dominating the area, selective grazing by livestock, and pressure exerted by small mammals and rodents. However, the time required for the Mxsh Rup SHS to return to a grassland can be greatly reduced by the removal of competing woody species.

5. Mixed Shrub Hills (Mxsh Hills)

(See Mixed Shrub Rolling Upland for explanation).

6. Mixed Shrub Mountain (Mxh Mtn)

The potential plant communities as described by the SCS for the Igneous Hills and Mountains, and Limestone Hills Range Sites (the range sites composing 85% of the Mxsh Mtn SHS), indicate that woody species compose approximately 15-25% of the total climax vegetation and grasses from 60-75%. However, data from the analyzation of twenty BLM 200 step-point transects shows that woody species presently compose approximately 50% and grasses only 45% of the vegetation in the Mxsh Mtn SHS. The increase of woody species and decrease of grass species is a result of three main factors:

- o Selective grazing of grass species by livestock favors the growth of woody species over grass species;
- o Once woody species have become established they compete more effectively for the limited moisture than grass species in the semi-arid climate of southwestern New Mexico;

- o In the past fire played a key role in the control of woody species in grasslands. The suppression of grassland fires has allowed the invasion of woody species on grasslands to progress unchecked.

Most areas presently occupied with good stands of woody species will not revert back to what was predominantly a grassland unless subjected to such outside forces as mechanical manipulation or periodic fires. This is true even under the influence of very light or no grazing, as the woody species are too strongly established to be crowded out by grass species.

If the Mxsh Mtn SHS is subjected to long periods of overgrazing, grass species will gradually compose less and less of the total plant community composition and woody species more. However, the plant community would still be classified as a Mxsh Mtn SHS.

7. Half-Shrub Rolling Upland (Hash Rup)

Analyzation of twenty BLM 200 step-point transects from the Hash Rup SHS indicates that snakeweed composes 42.1% of the plant community, mesquite 10.6%, fluffgrass 8.8%, and black grama 3.5%. Hence, it would appear that a typical area within the Hash Rup SHS would exhibit a dominant aspect of snakeweed and scattered mesquite, underlain with a sparse understory of fluffgrass and black grama.

Donart (1978) in performing research on snakeweed has found it to be a very opportunistic plant. He reports that snakeweed is dominant in grasslands only after competing grasses have been weakened and ground cover reduced. This may be caused by extended periods of overgrazing, by drought, or by a combination of such influences.

- Ideal conditions for the encroachment of snakeweed appear to be very droughty summers, which serve to reduce grass ground cover, followed by moist falls. Donart's research has found high correlations between such climatic patterns and the establishment of new snakeweed colonies the following spring and summer.

Snakeweed presence is very cyclic in nature. It is susceptible to drought and in addition, Rootbore. Rootbore is the name given to a small grub that attacks the roots of snakeweed plants; the end result being death of the plant. Such attacks often completely decimate snakeweed colonies within the course of a summer.

Since snakeweed occurence is cyclic in nature, it may often disappear from the plant community for short periods of time, thereby, converting many areas within the Hash Rup SHS, which have also been invaded by mesquite; into a Prosopis Juliflora Rolling Upland SHS. In areas within the Hash Rup SHS that have not been invaded by mesquite, the disappearance of snakeweed combined with years of favorable precipitation may result in the conversion of the area back to a grassland. However, once an area has been invaded by both snakeweed and mesquite, it is very doubtful that the area will revert back to a grassland even under complete rest. Research by Norris (1950) on snakeweed-mesquite types indicates that grazing pressure exerted by rodents and rabbits alone will prevent vegetation improvement. Wright (1960) in performing research on the New Mexico Agricultural Experiment Station Ranch, found that crown spread of mesquite increased under complete protection as well as under livestock use. Hence, it would appear that even under complete rest, areas

dominated by both snakeweed and mesquite will continue on a downward successional trend. According to research by Buffington and Herbel (1965) this downward trend could bottom out at a creosote-bush dominated vegetation type, or under extended heavy use, the areas having sandy textured soils could regress to what the BLM has designated as a Prosopis Juliflora Dunes SHS.

8. Grass Rolling Upland (Grass Rup)

As the Plains Desert Grassland is the climax vegetation for the majority of the area around Las Cruces (Gardener 1951), there should be no significant change in the aspect of the Grass Rup SHS if grazed only lightly or moderately. However, if the Grass Rup SHS is grazed heavily, grass species will be weakened and/or die, and total ground cover will be reduced. This will allow for opportunity of invasion by such noxious woody species as snakeweed, tarbush, mesquite and creosotebush.

- o The particular species invading an area will depend upon a variety of factors, including soil type and texture of the particular site being invaded, and accessibility of the invading species' seed source to the area.

- o Under the influence of heavy grazing different areas within the Grass Rup SHS could regress to the Hash Rup SHS, the Prju Rup SHS, the Mxsh Rup SHS or the Latr Rup SHS. Under extended heavy use, areas composed of sandy textured soils invaded by mesquite could further regress to a Prju Dunes SHS.

9. Grass Hills

As with the Grass Rup SHS, the Grass Hills SHS should not change significantly in aspect over the next one hundred years if protected from grazing or if grazed only moderately.

However, if influenced by extended periods of heavy grazing, the Grass Hills SHS would be invaded by a variety of noxious woody species. Specific sites within the Grass Hills SHS would be affected differently, but would probably regress to one of three possible SHS's.

- Areas of lowest potential would regress to a predominantly creosotebush vegetation type, or to the equivalent of a Latr Hills SHS. These lower potential areas will generally be encountered at the lower elevations as influenced by lower and more sporadic annual precipitation.

- The majority of the Grass Hills SHS would probably be taken over by a mixture of woody species composed predominantly of snakeweed, mariola, creosotebush, feather dalea, mesquite, and juniper. These species already compose a significant portion of the plant community of the Grass Hills SHS. Hence, as time passed and grass species were reduced in density by heavy grazing, the woody species would gradually increase in density and eventually form a new plant community. Such a plant community would project the aspect of a Mxsh Hills SHS.

- A small portion of the Grass Hills SHS would convert to a pinyon-juniper vegetation type. As pinyon and juniper trees require more precipitation, this change would occur only in the hills found in the higher elevations and predominantly in the northwest portion of the Las Cruces District.

10. Grass Mountains (Grass Mts)

As with the Grass Rup SHS and the Grass Hills SHS, the aspect of the Grass Mtn SHS should not change significantly within the next one hundred years unless subjected to extended periods of heavy grazing.

In areas found within the northwest portion of the Las Cruces District, extended overgrazing may result in the invasion of mountain grasslands by pinyon and juniper trees. It has been found that as grass stands are weakened from

heavy grazing, they are no longer able to compete with invading juniper seedlings (Springfield 1976). In addition, the increased number of juniper trees brought about by overgrazing produces a faster rate of juniper seedling germination through the dissemination of seeds by animals. Juniper seeds from animal droppings have been found to germinate faster (Johnsen 1962).

In the largest portion of the Las Cruces District, the Grass Mtn SHS would be expected to regress to a Mxsh Mtn SHS if subjected to extended periods of heavy grazing. The dominant woody species encountered in this SHS would be mariola, snakeweed, creosotebush, mesquite, juniper, spicebush, and Apache plume.

11. Grass Flat

As with the previously discussed grass dominated SHSs, the Grass Flat SHS will not appreciably change in appearance unless overgrazed for an extended period of time. Initial influences of overgrazing of the Grass Flat SHS would lead in most instances to an invasion by snakeweed, creating a half-shrub vegetation aspect. Continued overgrazing of the Grass Flat SHS would lead to increased invasion by mesquite or creosotebush, or a mixture of tarbush, mesquite, and creosotebush. Such vegetative aspects would be typical of Prju, Latr, and Mxsh SHSs respectively. In general, the Grass Flat SHS follows the same successional pattern as the Grass Rup SHS.

* In the previous discussion and also on the chart, it is not indicated that the Grass Flat SHS will change to a Hash Flat, Prju Flat, Latr Flat, or Mxsh Flat SHS. Instead, only the changes in vegetative aspect were indicated. This is due to the fact that no Hash Flat, Prju Flat, Latr Flat, or Mxsh Flat SHSs have been designated within the current BLM SHS classification system.

12. Malpais

Under the current BLM classification system, the SHSs are in most instances classified on the basis of the aspect of the present vegetation and the general landform. The exception to this approach being the Malpais SHS, which has been so classified on the basis of the rock, malpais. As rocks are not greatly influenced by grazing, this SHS will in most likelihood remain forever a Malpais SHS.

o In the present subclimax state the Malpais SHS plant community is composed of 55% woody species, 44% grass species and 1% forbs. Dominant woody species are snakeweed, shrubby buckwheat, creosotebush, and mesquite. The most frequently encountered grass species are black grama and tobosa. In comparison, the SCS has described the potential natural plant community for the Malpais Range Site as being composed of 65-75% grasses, 15-20% woody species and 3-5% forbs.

* It should be noted that of the twelve hundred BLM range transects analyzed, only six were designated as being of the Malpais SHS. This would tend to indicate that this SHS composes a very small area within the District. If this is true, it may be better to lump the Malpais SHS with another of the SHS's.

13. Prosopis juliflora (Rolling Upland (Prju Rup)

Much of the area now dominated by mesquite is actually a grazing disclimax which under climax conditions had been a Plains Desert Grassland. The presence of mesquite may represent an intermediate stage of regression between a grassland and a creosotebush vegetation type. If subjected

to extremely heavy grazing pressure, this site may further regress to a mesquite dunes type.

Extensive research has been done on the effects of mesquite invasion of desert grasslands. In general, such research has found that once mesquite has become established, it can only be removed through the implementation of a mechanical or chemical treatment program. In many instances, research has found that mesquite actually increases more on protected range than on range that is grazed (Glendening 1952). This tends to indicate a continuous regression of the plant community under complete protection from grazing, as well as under moderate and heavy grazing.

How fast and to what extent an area will regress is dependent upon several factors:

1) the present relative condition of the plant community in relation to climax vegetation;
2) the intensity of grazing the area is subjected to;
3) the soil texture and depth;
4) the distance from the seed source of the invading species;
5) the reliability of the precipitation in the area.

14. Prosopis juliflora Dunes (prju Dunes)

The mesquite dunes appear to be the result of extreme overgrazing and are frequently found in areas which have been subjected to heavy livestock concentrations (Campbell 1929).

A classic example of such an area is the "Camino Real", a trail from Chihuahua, Mexico to Santa Fe, New Mexico which traversed the Jornada Plain. In the early 1800's great herds of sheep, goats, cattle, and horses were driven along

this trail. As a result, the trail can be easily located today due to the presence of mesquite dunes.

Under the influence of all degrees of grazing the Prju Dunes SHS will remain dominated by mesquite dunes. Even if protected from grazing, the mesquite dunes will not change appreciably for a long period of time. This can be documented by an exclosure on the Jornada Experimental Range which had originally been established in 1931 on a mesquite dune and black grama grassland transitional area. After 34 years of protection from grazing the mesquite dunes had taken over the entire exclosure and advanced out onto what had previously been adjoining grasslands.

15. Pinyon-Juniper (P-J)

Many areas presently occupied by pinyon-juniper vegetation are the result of the invasion of grassland communities by pinyon and/or juniper trees (Springfield 1976). With the introduction of livestock, many grasslands were overgrazed. Grass stands were weakened to the extent they could no longer compete with invading tree seedlings. Additionally, the grass was no longer thick enough to carry fire, which had prior to the introduction of livestock periodically swept across ranges and killed many trees. The combination of overgrazing and absence of fires not only allowed the encroachment of trees upon grasslands, but also allowed original stands of trees to become thicker (Parker 1945). A third factor related

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15. Pinyon-Juniper (P-J)

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to the increase in the number of trees was the dissemination of juniper seeds by such animals as coyotes, birds, deer, and livestock. It has been determined that juniper seeds disseminated through animal droppings, germinate faster than naturally dispersed seed (Johnsen 1962).

The impacts of grazing upon grass species in a P-J vegetation type vary according to species, density of tree stands, elevation, precipitation, and soil texture and depth. A dense tree overstory may prevent any noticeable changes in the understory.

- Research in New Mexico by Springfield in 1959 found that after 10 to 14 years of protection from grazing, changes in herbaceous cover were negligible where the tree canopy exceeded 30 percent. It was found in the same study that where tree canopy cover was less than 20 percent, production of perennial grasses improved substantially.
- Other studies in southern New Mexico have found that perennial grass species production improves when pinyon-juniper stands are protected from grazing (Pieper in 1968, and Potter and Krenetsky in 1967).

However, even with improvements in grass stands, there still remains a pinyon-juniper aspect. The only means by which this aspect can be changed is through the mechanical removal of trees, or through a long, slow successional process in which fire would play an important role. Either process would result in a vegetation type similar to the Grass Mtn or the Grass Hill SHS.

16. Pseudoriparian (Pseudo)

The Pseudoriparian SHS is the designation that has been given to the vegetation types that are encountered in and along dry washes. Data from BLM range transects indicate that the Pseudoriparian SHS is dominated by a mixture of woody species with a sparse understory of grass species.

Plant species composition is extremely variable from one area of the Las Cruces District to another. In general, this is due to the variety of vegetation types found within the District. As dry washes occur in all vegetation types, there are several different plant communities composing the Pseudoriparian SHS. Since the designation of the Pseudoriparian SHS is based upon the fact that it is located in a dry wash, this SHS will not evolve or regress into another SHS unless the course of the wash changes. Hence, the Pseudoriparian SHS will remain a Pseudoriparian SHS simply because grazing, in the short term, will not effect a wash to such a degree that it will no longer be a wash.

17. Riparian

The Riparian SHS forms a unique and complex vegetative community. Similar to the Pseudoriparian SHS, it is characterized by a great deal of variety in species composition from one area of the District to another.

In order to reduce the great variety in species composition and to allow for more specific selection of key

16. Pseudotripertian (Pseudo)

The Pseudotripertian SHS is the designation that has been given to the vegetation types that are encountered in and along dry washes. Data from BLM range transects indicate that the Pseudotripertian SHS is dominated by a mixture of woody species with a sparse understory of grass species.

Plant species composition is extremely variable from one area of the Las Cruces District to another. In general, this is due to the variety of vegetation types found within the District. As dry washes occur in all vegetation types, there are several different plant communities comprising the Pseudotripertian SHS. Since the designation of the Pseudotripertian SHS is based upon the fact that it is located in a dry wash, this SHS will not evolve or regress into another SHS unless the course of the wash changes. Hence, the Pseudotripertian SHS will remain a Pseudotripertian SHS simply because grazing, in the short term, will not effect a wash to such a degree that it will no longer be a wash.

17. Riparian

The Riparian SHS forms a unique and complex vegetative community. Similar to the Pseudotripertian SHS, it is characterized by a great deal of variety in species composition from one area of the District to another.

In order to reduce the great variety in species composition and to allow for more specific selection of key

vertebrate species for the Riparian SHS, AAI has subdivided the Riparian SHS into Riparian Deciduous Forest and Riparian Deciduous Woodland classifications. The Riparian Deciduous Forest corresponds to a sycamore-cottonwood-walnut vegetation association, whereas the Riparian Deciduous Woodland is composed primarily of a mesquite-seep willow-salt cedar-willow vegetation association.

The subdivision of the Riparian SHS has allowed for the specific selection of key vertebrate species which are primarily encountered in only the Riparian Deciduous Forest or the Riparian Deciduous Woodland. As both types of riparian habitat occur within the Las Cruces District, the subdivision of the Riparian SHS was felt to be necessary.

No successional changes were indicated as occurring for either the Riparian Deciduous Forest or Woodland under any degrees of utilization. This is not meant to imply that changes are not possible. For it is possible that a spring or seep fed riparian area could be destroyed by extreme livestock concentrations. But, in order to determine which riparian areas would be affected by heavy livestock use, and to which specific SHS the affected areas would evolve to, it would require that each riparian area be individually studied.

18. Stockpond

No successional changes indicated.

D. POTENTIAL NATURAL PLANT COMMUNITIES

Section 3.2 of the contract requests a concise description of the succession expected to occur by percent composition of dominant plant species. In order to comply with this request, a list of the potential plant species and their relative percent compositions was developed for each SHS.

The lists were developed by first determining the number of range sites composing each SHS and the relative percentage of the SHS that each range site composed. Then, by utilizing a weighted average based upon the relative percent each range site composed of each SHS, and the descriptions of the potential natural plant communities for each range site as established by the Soil Conservation Service, a list of the potential dominant plant species and their relative percent compositions was developed for each SHS.

It should be noted that these lists are reflective of the potential of the SHSs. In many instances, this potential will not be attained within fifty or even one hundred years, but may require several hundred years to be reached.

* A list was not developed for the Riparian SHS; as there is too much variability found within the different plant communities forming the Riparian SHSs. The Riparian areas throughout the District have in many cases, distinctly different vegetative potentials which cannot be combined into one list which adequately describes the potential plant community for the Riparian SHS. A separate list would have to be developed for each different riparian area within the District. This would be extremely time consuming and would require much more field analysis and data collection.

APPENDIX A

RANGE SITE PERCENTAGE COMPOSITION OF STANDARD HABITAT SITES AS DERIVED FROM RANGE SITE TRANSECTS ANALYZED

APPENDIX A

SHS - Larrea tridentata Rolling Upland

Range Site No.	Range Site	% Comp. of SHS	No. Transects Analyzed
42-10-NTx	Gravelly	42.9%	9
42-12-NTx	Sandy	13.7%	3
42-35-NTx	Gravelly Loam	8.6%	2
42-14-NTx	Loamy	7.7%	2
42-24-NTx	Gravelly Sand	6.9%	1
42-15-NTx	Shallow Sandy	6.9%	1
42-37-N	Malpais	4.9%	1
42-27-NTx	Igneous Hills and Mountains	3.8%	1

SHS - Larrea tridentata Breaks

Range Site No.	Range Site	% Comp. of SHS	No. Transects Analyzed
42-24-NTx	Gravelly Sand	42.7%	9
42-10-NTx	Gravelly	34.7%	7
42-27-NTx	Igneous Hills and Mountains	9.3%	2
42-11-NTx	Deep Sand	5.3%	1
42-12-NTx	Sandy	4.0%	1

SHS - Larrea tridentata Hill

Site No.	Range Site	% Comp. of SHS	No. Transects Analyzed
42-27-NTx	Igneous Hills and Mountains	45.0%	9
42-21-NTx	Limestone Hills	35.0%	7
42-37-N	Malpais	10.0%	2
42-10-NTx	Gravelly	10.0%	2

SHS - Mixed Shrub Rolling Upland

Range Site No.	Range Site	% Comp. of SHS	No. Transects Analyzed
42-35-NTx	Gravelly Loam	22.0%	6
42-16-NTx	Draw Range Site	12.0%	3
42-27-NTx	Igneous Hills and Mountains	12.0%	3
42-10-NTx	Gravelly	14.0%	3
42-12-NTx	Sandy	14.0%	3
42-11-NTx	Deep Sand	6.0%	1
42-21-NTx	Limestone Hills	6.0%	1

SHS - Mixed Shrub Hill

Range Site No.	Range Site	% Comp. of SHS	No. Transects Analyzed
42-21-NTx	Limestone Hills	44.0%	10
42-27-NTx	Igneous Hills and Mountains	28.0%	7
[illegible]-103-N	Hills Range Site	12.0%	3

SHS - Mixed Shrub Mountains

Range Site No.	Range Site	% Comp. of SHS	No. Transects Analyzed
42-27-NTx	Igneous Hills and Mountains	56.1%	12
42-21-NTx	Limestone Hills	29.3%	6
42-24-NTx	Gravelly Sand	4.9%	1
42-35-NTx	Gravelly Loam	4.9%	1

SHS - Half Shrub Rolling Upland

Range Site No.	Range Site	% Comp. of SHS	No. Transects Analyzed
42-12-NTx	Sandy	39.5%	10
42-25-NTx	Shallow Sandy	17.8%	4
42-35-NTx	Gravelly Loam	7.2%	2
42-37-N	Malpais	5.9%	1
42-10-NTx	Gravelly	5.9%	1
42-18-NTx	Bottomlands	5.0%	1
42-14-NTx	Loamy	3.9%	1

SHS - Grass Rolling Upland

Range Site No.	Range Site	% Comp. of SHS	No. Transects Analyzed
42-14-NTx	Loamy	17.1%	4
42-27-NTx	Igneous Hills and Mountains	11.0%	3
[illegible]12-NTx	Sandy	9.8%	3
[illegible]35-NTx	Gravelly Loam	8.5%	2
[illegible]15-NTx	Shallow Sandy	6.1%	2
42-23-NTx	Clayey	4.9%	1
42-18-NTx	Bottomlands	3.7%	1
42-16-NTx	Draw Range Site	3.7%	1
D36-102-N	Gravelly Range Site	3.7%	1
D36-104-N	Loamy	3.7%	1
D36-108-N	Basalt Hills	3.7%	1

SHS - Grass Hills

Range Site No.	Range Site	% Comp. of SHS	No. Transects Analyzed
D36-108-N	Basalt Hills	34.8%	7
42-27-NTx	Igneous Hills and Mountains	30.4%	6
42-21-NTx	Limestone Hills	13.0%	3
D36-103-N	Hills Range Site	13.0%	3
42-37-N	Malpais	8.7%	1

SHS - Grass Mountains

Range Site No.	Range Site	% Comp. of SHS	No. Transects Analyzed
42-27-NTx	Igneous Hills and Mountains	64.3%	13
D36-105-N	Breaks Range Site	14.3%	3
[illegible]5-NTx	Gravelly Loam	14.3%	3
[illegible]-103-N	Hills Range Site	7.1%	1

SHS - Grass Flat

Range Site No.	Range Site	% Comp. of SHS	No. Transects Analyzed
42-16-NTx	Draw Range Site	36.0%	7
42-18-NTx	Bottomlands	18.0%	4
42-14-NTx	Loamy	15.0%	3
42-23-NTx	Clayey	13.0%	3
42-12-NTx	Sandy	7.0%	1
42-15-NTx	Shallow Sandy	5.0%	1

SHS - Malpais

Range Site No.	Range Site	% Comp. of SHS	No. Transects Analyzed
42-37-N	Malpais	100.0%	6

SHS - Prosopis juliflora Rolling Upland

Range Site No.	Range Site	% Comp. of SHS	No. Transects Analyzed
42-12-NTx	Sandy	42.1%	10
42-15-NTx	Shallow Sandy	15.0%	3
42-18-NTx	Bottomlands	14.0%	3
42-16-NTx	Draw Range Site	7.5%	2
42-14-NTx	Loamy	5.6%	1
42-35-NTx	Gravelly Loam	5.6%	1

SHS - Prosopis juliflora Dunes

Range Site No.	Range Site	% Comp. of SHS	No. Transects Analyzed
42-12-NTx	Sandy	70.1%	15
42-11-NTx	Deep Sand	13.2%	3
42-15-NTx	Shallow Sandy	12.0%	2

SHS - Pinyon-Juniper

Range Site No.	Range Site	% Comp. of SHS	No. Transects Analyzed
D36-103-N	Hills Range Site	54.5%	11
42-10-NTx	Gravelly	13.6%	3
42-35-NTx	Gravelly Loam	13.6%	3
42-21-NTx	Limestone Hills	9.1%	2
D36-108-N	Basalt Hills	9.1%	2

SHS - Pseudoriparian

Range Site No.	Range Site	% Comp. of SHS	No. Transects Analyzed
42-24-NTx	Gravelly Sand	40.0%	8
42-16-NTx	Draw Range Site	30.0%	6
42-18-NTx	Bottomlands	15.0%	3
42-10-NTx	Gravelly	10.0%	2
42-12-NTx	Sandy	5.0%	1

PLANT SPECIES INVENTORY LISTS FOR STANDARD HABITAT SITES FOUND IN THE BUREAU OF LAND MANAGEMENT, LAS CRUCES DISTRICT

SPECIES INVENTORY LIST FOR THE LARREA TRIDENTATA ROLLING UPLAND STANDARD HABITAT SITE

GRASSES	SHRUBS AND TREES	FORBS
Erioneuron pulchellum	Larrea divaricata	Perezia nana
Scleropogon brevifolius	Gutierrezia sarothrae	Sphaeralcea spp.
Hilaria mutica	Flourensia cernua	Cassia bauhinioides
Muhlenbergia porteri	Prosopis glandulosa	Allionia incarnata
Bouteloua eriopoda	Parthenium incanum	Petunia parviflora
Bouteloua curtipendula	Rhus microphylla	Euphorbia alta
	Nolina microphylla	Bahia absinthifolia
	Dyssodia acerosa	Solanum elaeagnifolium
		Salsola kali

* The above listed species compose approximately 93.9% of the plant species composition found within the Larrea tridentata Rolling Upland Standard Habitat Site. Species are listed in order of dominance, as was determined from BLM, 1978 range transect data.

SPECIES INVENTORY LIST FOR THE LARREA TRIDENTATA BREAKS STANDARD HABITAT SITE

GRASSES	SHRUBS AND TREES	FORBS
Erioneuron pulchellum	Larrea divaricata	Euphorbia spp.
Bouteloua eriopoda	Prosopis glandulosa	Bahia absinthifolia
Bothriochloa barbinoides	Acacia constricta	Allionia incarnata
Hilaria mutica	Parthenium incanum	Cassia bauhinioides
Muhlenbergia porteri	Gutierrezia sarothrae	Lesquerella fendleri
Tridens muticus	Menodora scabra	Sphaeralcea spp.
Bouteloua curtipendula	Flourensia cernua	Petunia parvifolia
Sporobolus flexuosus	Coldenia canescens	Talinum anguspissimum
Sporobolus cryptandrus	Yucca elata	Solanum elaeagnifolium
	Rhus microphylla	
	Dyssodia acerosa	
	Ephedera trifurca	

* The above listed species compose approximately 92.4% of the plant species composition found within the Larrea tridentata Breaks Standard Habitat Site. Species are listed in order of dominance, as was determined from BLM, 1978 range transect data.

SPECIES INVENTORY LIST FOR THE LARREA TRIDENTATA HILL STANDARD HABITAT SITE

GRASSES	SHRUBS AND TREES	FORBS
Bouteloua eriopoda	Larrea divaricata	Allionia incarnata
Erioneuron pulchellum	Parthenium incanum	Euphorbia spp.
Hilaria mutica	Gutierrezia sarothrae	Eriogonum spp.
Muhlenbergia porteri	Flourensia cernua	Bahia absinthifolia
Aristida spp.	Aloysia Wrightii	Perezia nana
Enneapogon desvauxii	Acacia constricta	Melampodium leucanthum
Tridens muticus	Rhus microphylla	Lesquerella fendleri
Lycurus phleoides	Dalea formosa	Cassia bauhinioides
Sporobolus cryptandrus	Zinnea pumila	Chenopodium album
Scleropogon brevifolius	Menodora scabra	Sphaeralcea spp.
	Fouquieria splendens	Tidestroemia spp.
	Nolina microcarpa	Amaranthus spp.
	Atriplex canescens	
	Koeberlinia spinosa	
	Coldenia canescens	

* The above listed species compose approximately 93.7% of the plant species composition found within the Larrea tridentata Hill Standard Habitat Site. Species are listed in order of dominance, as was determined from BLM, 1978 range transect data.

SPECIES INVENTORY LIST FOR THE MIXED SHRUB ROLLING UPLAND STANDARD HABITAT SITE

GRASSES	SHRUBS AND TREES	FORBS
Hilaria mutica	Gutierrezia sarothrae	Aster spp.
Bouteloua eriopoda	Prosopis glandulosa	Perezia nana
Erioneuron pulchellum	Larrea divaricata	Bahia absinthifolia
Bouteloua hirsuta	Flourensia cernua	Sphaeralcea spp.
Scleropogon brevifolius	Parthenium incanum	Allionia incarnata
Bouteloua gracilis	Mimosa biuncifera	Cassia bauhinioides
Bouteloua curtipendula	Opuntia Engelmannii	Baileya multiradiata
Bothriochloa saccaroides	Rhus microphylla	Lesquerella fendleri
Sporobolus flexuosus	Ericameria laricifolia	Euphorbia albomarginata
Muhlenbergia porteri	Eriogonum Wrightii	
Aristida spp.	Dalea formosa	
Aristida longiseta	Acacia constricta	
	Krameria parvifolia	
	Aloysia Wrightii	
	Ephedra trifurca	
	Yucca elata	
	Fallugia paradoxa	
	Nolina microcarpa	
	Dasylirion Wheeleri	

* The above listed species compose approximately 93.6% of the plant species composition found within the Mixed Shrub Rolling Upland Standard Habitat Site. Species are listed in order of dominance, as was determined from BLM, 1978 range transect data.

SPECIES INVENTORY LIST FOR THE MIXED SHRUB HILL STANDARD HABITAT SITE

GRASSES	SHRUBS AND TREES	FORBS
Bouteloua eriopoda	Gutierrezia sarothrae	Sphaeralcea spp.
Erioneuron pulchellum	Parthenium incanum	Euphorbia spp.
Bouteloua gracilis	Larrea divaricata	Allionia incarnata
Muhlenbergia montana	Flourensia cernua	Melampodium leucanthum
Bouteloua curtipendula	Dalea formosa	Dalea Jamesii
Hilaria Mutica	Acacia constricta	Allium spp.
Muhlenbergia spp.	Juniperus monosperma	
Aristida spp.	Cercocarpus montanus	
Tridens muticus	Menodora scabra	
Muhlenbergia porteri	Rhus microphylla	
Enneapogon desvauxii	Prosopis glandulosa	
Lycurus phleoides	Fouquiëria splendens	
Sporobolus flexuosus	Viguiera stenoloba	
	Opuntia Engelmannii	
	Dyssodia acerosa	
	Nolina microcarpa	
	Rhus aromatica	
	Aloysia Wrightii	
	Yucca baccata	
	Eriogonum Wrightii	
	Koeberlinia spinosa	
	Fallugia paradoxa	
	Dasylirion Wheeleri	
	Eurotia lanata	

* The above listed species compose approximately 91.5% of the plant species composition found within the Mixed Shrub Hill Standard Habitat Site. Species are listed in order of dominance, as was determined from BLM, 1978 range transect data.

SPECIES INVENTORY LIST FOR THE MIXED SHRUB MOUNTAIN STANDARD HABITAT SITE

GRASSES	SHRUBS AND TREES	FORBS
Bouteloua eriopoda	Larrea divaricata	Sphaeralcea spp.
Bouteloua curtipendula	Parthenium incanum	Allionia incarnata
Erioneuron pulchellum	Gutierrezia sarothrae	Croton pottsii
Bouteloua hirsuta	Quercus turbinella	Euphorbia spp.
Bouteloua gracilis	Opuntia Engelmannii	Dyssodia pasposa
Digitaria californica	Acacia constricta	Cevallia sinuata
Muhlenbergia porteri	Mimosa biuncifera	Commelina erecta
Sporobolus flexuosus	Fallugia paradoxa	Grindelia squarrosa
Bothriochloa saccharoides	Prosopis glandulosa	Polygala spp.
Tridens muticus	Aloysia Wrightii	Bahia absinthifolia
Muhlenbergia Emersleyi	Yucca baccata	
Aristida spp.	Fouquieria splendens	
	Rhus aromatica	
	Dasylirion Wheeleri	
	Eriogonum Wrightii	
	Flourensia cernua	
	Cercocarpus montanus	
	Dalea formosa	
	Rhus microphylla	
	Menodora scabra	
	Garrya Wrightii	
	Quercus grisea	
	Baccharis spp.	

* The above listed species compose approximately 92.7% of the plant species composition found within the Mixed Shrub Mountain Standard Habitat Site. Species are listed in order of dominance, as was determined from BLM, 1978 range transect data.

SPECIES INVENTORY LIST FOR THE HALF SHRUB ROLLING UPLAND STANDARD HABITAT SITE

GRASSES	SHRUBS AND TREES	FORBS
Erioneuron pulchellum	Gutierrezia sarothrae	Croton pottsii
Bouteloua eriopoda	Prosopis glandulosa	Sphaeralcea spp.
Hilaria mutica	Ephedra trifurca	Euphorbia spp.
Muhlenbergia porteri	Yucca elata	Bahia absinthifolia
Sporobolus cryptandrus	Artemisia filifolia	Linum spp.
Sporobolus flexuosus	Flourensia cernua	Salsola kali
Bothriochloa barbinoides	Ziziphus obtusifolia	Tidestroemia lanuginosa
Bouteloua aristidoides	Acacia constricta	Petunia parviflora
Aristida adscenionis	Larrea divaricata	Amaranthus spp.
Bouteloua barbata	Rhus microphylla	
	Fallugia paradoxa	

* The above listed species compose approximately 94% of the plant species composition found within the Half Shrub Rolling Upland Standard Habitat Site. Species are listed in order of dominance, as was determined from BLM, 1978 range transect data.

SPECIES INVENTORY LIST FOR THE GRASS ROLLING UPLAND STANDARD HABITAT SITE

GRASSES	SHRUBS AND TREES	FORBS
Hilaria mutica	Larrea divaricata	Croton pottsii
Bouteloua eriopoda	Gutierrezia sarothrae	Sphaeralcea spp.
Erioneuron pulchellum	Rhus microphylla	Euphorbia spp.
Scleropogon brevifolius	Parthenium incanum	Solanum elaeagnifolium
Bouteloua gracilis	Prosopis glandulosa	Allionia incarnata
Bouteloua curtipendula	Ephedra trifurca	Machaeranthera spp.
Muhlenbergia arenicola	Yucca elata	Hoffmanseggia glauca
Sporobolus airoides	Dalea formosa	Lepidium montanum
Sitanion hystrix	Lycium pallidum	Tidestroemia lanuginosa
Bouteloua hirsuta		Bahia absinthifolia
Aristida spp.		
Panicum obtusum		
Muhlenbergia porteri		
Sporobolus flexuosus		
Bouteloua barbata		

* The above listed species compose approximately 96.6% of the plant species composition found within the Grass Rolling Upland Standard Habitat Site. Species are listed in order of dominance, as was determined from BLM, 1978 range transect data.

SPECIES INVENTORY LIST FOR THE GRASS HILL STANDARD HABITAT SITE

GRASSES	SHRUBS AND TREES	FORBS
Bouteloua eriopoda	Gutierrezia sarothrae	Sphaeralcea spp.
Bouteloua curtipendula	Parthenium incanum	Croton pottsii
Hilaria mutica	Dalea formosa	Chenopodium album
Bouteloua hirsuta	Quercus spp.	Tragia spp.
Bouteloua gracilis	Aloysia Wrightii	Melampodium leucanthum
Aristida spp.	Dasylirion Wheeleri	Bahia absinthifolia
Lycurus phleoides	Larrea divaricata	Salsola kali
Muhlenbergia montana	Nolina microcarpa	Lesquerella fendleri
Erioneuron pulchellum	Cercocarpus montanus	Cassia bauhinioides
Bothriochloa saccharoides	Juniperus monosperma	
Tridens muticus	Prosopis glandulosa	
Sporobolus contractus	Calliandra eriophylla	
Eragrostis spp.	Viguiera longifolia	
Setaria macrostachya	Artemisia ludoviciana	
Sporobolus cryptandrus		
Stipa comata		
Enneapogon desvauxii		

* The above listed species compose approximately 92.5% of the plant species composition found within the Grass Hill Standard Habitat Site. Species are listed in order of dominance, as was determined from BLM, 1978 range transect data.

SPECIES INVENTORY LIST FOR THE GRASS MOUNTAIN STANDARD HABITAT SITE

GRASSES	SHRUBS AND TREES	FORBS
Bouteloua eriopoda	Parthenium incanum	Hoffmanseggia Jamesii
Hilaria mutica	Gutierrezia sarothrae	Sphaeralcea spp.
Bouteloua curtipendula	Prosopis glandulosa	Astragalus spp.
Bouteloua gracilis	Larrea divaricata	Solanum elaeagnifolium
Aristida spp.	Artemisia ludoviciana	Bahia absinthifolia
Muhlenbergia torreyi	Aloysia Wrightii	Machaeranthera tephrones
Bouteloua hirsuta	Juniperus monosperma	Croton pottsii
Erioneuron pulchellum	Fallugia paradoxa	Euphorbia spp.
Muhlenbergia porteri	Flourensia cernua	Perezia nana
Setaria macrostachya	Atriplex canescens	Hoffmanseggia glauca
Lycurus phleoides	Cercocarpus montanus	Amaranthus spp.
Leptochloa dubia	Viguiera stenoloba	Tribulus terrestris
Panicum obtusum	Yucca baccata	
Bothriochloa saccaroides	Ceratoides lanata	
Sporobolus cryptandrus	Mimosa biuncifera	
Digitaria californica	Ephedra trifurca	
Enneapogon desvauxii	Fouquieria splèndens	
	Lycium pallidum	
	Acacia constricta	
	Dasylirion Wheeleri	

* The above listed species compose approximately 95.1% of the plant species composition found within the Grass Mountain Standard Habitat Site. Species are listed in order of dominance, as was determined from BLM, 1978 range transect data.

SPECIES INVENTORY LIST FOR THE GRASS FLAT STANDARD HABITAT SITE

GRASSES	SHRUBS AND TREES	FORBS
Hilaria mutica	Gutierrezia sarothrae	Euphorbia spp.
Scleropogon brevifolius	Prosopis glandulosa	Solanum elaeagnifolium
Panicum obtusum	Viguiera stenoloba	Hoffmanseggia glauca
Bouteloua gracilis	Larrea divaricata	Sphaeralcea spp.
Eragrostis spp.	Flourensia cernua	Croton pottsii
Muhlenbergia porteri	Ephedra trifurca	Kuhnia chlorolepsis
Sporobolus airoides	Coldenia canescens	Circium spp.
Erioneruon pulchellum		Tidestroemia lanuginosa
Aristida longiseta		Amaranthus spp.
Sporobolus contractus		Perezia nana
Bouteloua eriopoda		Petunia parviflora
Muhlenbergia arenicola		
Sporobolus cryptandrus		

* The above listed species compose approximately 94.3% of the plant species composition found within the Grass Flat Standard Habitat Site. Species are listed in order of dominance, as was determined from BLM, 1978 range transect data.

SPECIES INVENTORY LIST FOR THE MALPAIS STANDARD HABITAT SITE

GRASSES	SHRUBS AND TREES	FORBS
Bouteloua eriopoda	Gutierrezia sarothrae	Ammocodon chenopodioides
Hilaria mutica	Eriogonum Wrightii	Bahia absinthifolia
Scleropogon brevifolius	Larrea divaricata	Salsola kali
Erioneuron pulchellum	Prosopis glandulosa	Chenopodium album
Muhlenbergia porteri	Ephedra trifurca	Cassia bauhinioides
Sporobolus airoides	Atriplex canescens	Sphaeralcea spp.
Sporobolus cryptandrus	Lycium pallidum	
Bouteloua curtipendula	Rhus microphylla	
Enneapogon desvauxii	Yucca elata	
Aristida adscenionis	Dalea formosa	
	Zinnia grandiflora	
	Parthenium incanum	

* The above listed species compose approximately 98% of the plant species composition found within the Malpais Standard Habitat Site. Species are listed in order of dominance, as was determined from BLM, 1978 range transect data.

SPECIES INVENTORY LIST FOR THE PROSOPIS JULIFLORA ROLLING UPLAND STANDARD HABITAT SITE

GRASSES	SHRUBS AND TREES	FORBS
Hilaria mutica	Prosopis glandulosa	Euphorbia spp.
Erioneuron pulchellum	Gutierrezia sarothrae	Portulaca spp.
Sporobolus flexuosus	Flourensia cernua	Croton pottsii
Leptochloa dubia	Larrea divaricata	Perezia nana
Muhlenbergia porteri	Ephedra trifurca	Lesquerella fendleri
Sporobolus cryptandrus	Atriplex canescens	
Panicum obtusum	Lycium pallidum	
Setaria macrostachya	Yucca elata	
Bouteloua eriopoda		

* The above listed species compose approximately 91.9% of the plant species composition found within the Prosopis juliflora Rolling Upland Standard Habitat Site. Species are listed in order of dominance, as was determined from BLM, 1978 range transect data.

SPECIES INVENTORY LIST FOR THE PROSOPIS JULIFLORA DUNES STANDARD HABITAT SITE

GRASSES	SHRUBS AND TREES	FORBS
Sporobolus flexuosus	Prosopis glandulosa	Euphorbia spp.
Sporobolus cryptandrus	Gutierrezia sarothrae	Sphaeralcea spp.
Erioneuron pulchellum	Larrea divaricata	Helianthus spp.
Muhlenbergia porteri	Flourensia cernua	Lepidium montanum
Bouteloua eriopoda	Atriplex canescens	Euphorbia albomarginata
Sporobolus airoides	Yucca elata	Talinum anguspissimum
	Ephedra trifurca	
	Lycium pallidum	
	Dalea scoparia	
	Parthenium incanum	

* The above listed species compose approximately 94.8% of the plant species composition found within the Prosopis juliflora Dunes Standard Habitat Site. Species are listed in order of dominance, as was determined from BLM, 1978 range transect data.

SPECIES INVENTORY LIST FOR THE PINYON-JUNIPER STANDARD HABITAT SITE

GRASSES	SHRUBS AND TREES	FORBS
Bouteloua gracilis	Juniperus monosperma	Allium spp.
Muhlenbergia montana	Pinus edulis	Verbesina longifolia
Bouteloua curtipendula	Cercocarpus montanus	Allium macropetalum
Muhlenbergia rigida	Gutierrezia sarathrae	Lesquerella fendleri
Bouteloua eriopoda	Yucca baccata	Aster spp.
Enneapogon desvauxii	Parthenium incanum	Eriogonum spp.
Bouteloua hirsuta	Nolina microcarpa	Sphaeralcea spp.
Eragrostis intermedia	Fallugia paradoxa	Perezia nana
Erioneuron pulchellum	Quercus turbinella	Solanum elaeagnifolium
Muhlenbergia torreyi	Viguiera longifolia	Euphorbia spp.
Muhlenbergia arenacea	Rhus aromatica	Baileya multiradiata
Stipa eminens	Dalea formosa	Talinum anguspissimum
Aristida spp.	Dyssodia acerosa	Allionia incarnata
Tridens muticus	Opuntia Engelmannii	
Aristida longiseta	Opuntia imbricata	
Stipa viridula	Lycium pallidum	
Koelaria cristata	Ericameria laricifolia	
Lycurus phleoides	Rhus microphylla	
Sporobolus flexuosus	Fouquieria splendens	
Aristida divaricata	Quercus spp.	
	Viguiera stenoloba	

* The above listed species compose approximately 91.3% of the plant species composition found within the Pinyon-Juniper Standard Habitat Site. Species are listed in order of dominance, as was determined from BLM, 1978 range transect data.

SPECIES INVENTORY LIST FOR THE PSEUDORIPARIAN STANDARD HABITAT SITE

GRASSES	SHRUBS AND TREES	FORBS
Distichlis spicata	Larrea divaricata	Ipomea spp.
Cynodon dactylon	Tamarix ramosissima	Solanum elaeagnifolium
Bouteloua eriopoda	Rhus microphylla	Euphorbia spp.
Erioneuron pulchellum	Flourensia cernua	Salsola kali
Muhlenbergia porteri	Fallugia paradoxa	Lepidium montanum
Bouteloua gracilis	Chilopsis linearis	Talinum spp.
Sporobolus contractus	Prosopis glandulosa	Allionia incarnata
Sporobolus airoides	Gutierrezia sarothrae	Croton pottsii
Setaria macrostachya	Hymenoclea monogyra	Sphaeralcea spp.
Bothriochloa barbinoides	Baccharis spp.	
Hilaria mutica	Prosopis pubescens	
Sporobolus flexuosus	Brickellia laciniata	
Bouteloua curtipendula	Quercus spp.	
Aristida spp.	Berberis spp.	
Panicum obtusum	Ephedra trifurca	
Aristida Wrightii	Brickellia californica	
Sporobolus cryptandrus	Acacia constricta	
Aristida adscenionis		

* The above listed species compose approximately 92.1% of the plant species composition found within the Pseudoriparian Standard Habitat Site. Species are listed in order of dominance, as was determined from BLM, 1978 range transect data.

SPECIES INVENTORY LIST FOR THE RIPARIAN STANDARD HABITAT SITE

GRASSES	SHRUBS AND TREES	FORBS
Cynodon dactylon	Tamarix ramosissima	Ipomea spp.
Distichlis spicata	Prosopis pungens	Sphaeralcea spp.
Panicum obtusum	Flourensia cernua	Portulaca spp.
Hilaria mutica	Larrea divaricata	Solanum elaeagnifolium
Sporobolus Wrightii	Prosopis glandulosa	Hoffmanseggia glauca
Sporobolus airoides	Chilopsis linearis	Salsola kali
Muhlenbergia porteri	Gutierrezia sarothrae	Euphorbia albomarginata
Sporobolus cryptandrus	Dalea formosa	Baileya multiradiata
Muhlenbergia torreyi	Atriplex canescens	Allionia incarnata
Setaria macrostachya	Yucca elata	
Erioneuron pulchellum	Parthenium incanum	
Scleropogon brevifolius		

* The above listed species compose approximately 96.6% of the plant species composition found within the Riparian Standard Habitat Site. Species are listed in order of dominance, as was determined from BLM, 1978 range transect data.

PLANT SPECIES INVENTORY LISTS FOR POTENTIAL PLANT COMMUNITIES OF STANDARD HABITAT SITES FOUND IN THE BUREAU OF LAND MANAGEMENT, LAS CRUCES DISTRICT

POTENTIAL VEGETATION AND PERCENT COMPOSITIONS FOR THE LARREA TRIDENTATA ROLLING UPLAND STANDARD HABITAT SITE

GRASSES	% COMP.	SHRUBS & TREES	% COMP.	FORBS	% COMP.
Bouteloua eriopoda	17-25	Larrea divaricata	5-8	Perezia nana	4-9
Muhlenbergia porteri	8-16	Ephedra trifurca	2-5	Eriogonum spp.	4-8
Sporobolus cryptandrus	5-8	Yucca elata	2-5	Croton spp.	4-8
Bothriochloa barbinoides	4-13	Ceratoides lanata	1-4	Sphaeralcea spp.	3-7
Setaria macrostachya	4-13	Rhus microphylla	1-3	Psilostrophe tagetina	3-7
Digitaria californica	4-13	Gutierrezia sarothrae	1-3	Baileya multiradiata	2-4
Sporobolus flexuosus	4-6	Condalia spp.	1-2	Erodium cicutarium	1-3
Aristida spp.	2-6	Koeberlinia spinosa	0-2	Dithyrea Wislizeni	0-1
Hilaria mutica	2-4	Flourensia cernua	0-2	Senecio spp.	0-1
Sporobolus contractus	2-3	Parthenium incanum	0-1	Astragalus spp.	0-1
Erioneuron pulchellum	1-4	Krameria parvifolia	0-1	Solanum elaeagnifolium	0-1
Scleropogon brevifolius	1-2	Baccharis pteronioides	0-1	Descurainia spp.	0-1
Bouteloua curtipendula	1-2	Acacia constricta	0-1	Phacelia spp.	0-1
Bouteloua gracilis	1-2	Cacti	0-1	Mentzelia spp.	0-1
Enneapogon desvauxii	0-2	Artemisia filifolia	0-1	Plantago patagonica	0-1
Tridens muticus	0-1	Atriplex canescens	0-1		
Sporobolus airoides	0-1	Dalea scoparia	0-1		
Hilaria belangeri	0-1	Pluchea sericea	0-1		
Eragrostis intermedia	0-1	Fallugia paradoxa	0-1		
Leptochloa dubia	0-1	Prosopis glandulosa	0-1		
Heteropogon contortus	0-1	Dasylirion spp.	0-1		
Tridens spp.	0-1	Agave spp.	0-1		
Panicum Hallii	0-1	Fouquieria splendens	0-1		

POTENTIAL VEGETATION AND PERCENT COMPOSITIONS FOR THE LARREA TRIDENTATA BREAKS STANDARD HABITAT SITE

GRASSES	% COMP.	SHRUBS AND TREES	% COMP.	FORBS	% COMP.
Bouteloua eriopoda	11-18	Larrea divaricata	8-12	Perezia nana	4-9
Sporobolus cryptandrus	11-15	Yucca spp.	2-4	Psilostrophe tagetina	4-9
Sporobolus flexuosus	11-13	Pluchea sericea	1-4	Croton spp.	4-8
Muhlenbergia porteri	9-17	Ephedera trifurca	1-3	Descurainia spp.	2-5
Bothriochloa barbinoides	3-9	Atriplex canescens	1-3	Salsola kali	2-5
Digitaria californica	3-9	Gutierrezia sarothrae	1-2	Eriogonum spp.	2-5
Erioneuron pulchellum	3-7	Fallugia paradoxa	1-2	Sphaeralcea spp.	2-5
Setaria macrostachya	2-9	Koeberlinia spinosa	0-2	Phacelia spp.	2-4
Aristida spp.	1-5	Flourensia cernua	0-2	Plantago patagonica	0-1
Sporobolus Wrightii	1-2	Prosopis glandulosa	0-1	Dithyrea Wislizeni	0-1
Sporobolus giganteus	1-2	Parthenium incanum	0-1	Euphorbia spp.	0-1
Bouteloua gracilis	1-2	Krameria parvifolia	0-1		
Bouteloua curtipendula	1-2	Baccharis pteronioides	0-1		
Scleropogon brevifolius	0-1	Rhus microphylla	1-2		
Tridens muticus	0-1	Ceratoides lanata	0-2		
Enneapogon desvauxii	0-1	Acacia constricta	0-1		
Hilaria mutica	0-1	Opuntia spp.	0-1		
Leptochloa dubia	0-1	Condalia spp.	0-1		
Eragrostis intermedia	0-1	Artemisia filifolia	0-1		
Heteropogon contortus	0-1	Dalea scoparia	0-1		
		Dasylirion Wheeleri	0-1		
		Agave spp.	0-1		
		Fouquieria splendens	0-1		
		Quercus turbinella	0-1		

POTENTIAL VEGETATION AND PERCENT COMPOSITIONS FOR THE LARREA TRIDENTATA HILLS STANDARD HABITAT SITE

GRASSES	% COMP.	SHRUBS AND TREES	% COMP.	FORBS	% COMP.
Bouteloua eriopoda	21-26	Foquieria splendens	6-10	Eriogonum spp.	1-5
Muhlenbergia porteri	11-17	Yucca spp.	5-9	Plantago patagonica	1-4
Bouteloua curtipendula	7-12	Agave spp.	5-9	Sphaeralcea spo.	1-3
Bouteloua gracilis	7-11	Dasylirion Wheeleri	5-9	Gaillardia spp.	0-2
Bothriochloa barbinoides	5-11	Nolina microcarpa	2-5	Croton spp.	0-1
Eragrostis intermedia	5-9	Rhus microphylla	1-5	Perezia nana	0-1
Leptochloa dubia	5-9	Gutierrezia sarothrae	1-4	Psilostrophe tagetina	0-1
Digitaria californica	4-9	Opuntia spp.	1-3	Other perennials	4-9
Muhlenbergia Metcalfei	5-7	Atriplex canescens	1-2	Other annuals	2-5
Heteropogon contortus	3-7	Larrea divaricata	1-2		
Setaria macrostachya	3-7	Dalea formosa	0-2		
Artistida spp.	1-5	Quercus turbinella	0-2		
Stipa neomexicana	1-4	Aloysia Wrightii	0-2		
Hilaria mutica	1-3	Fallugia paradoxa	0-2		
Panicum Hallii	1-2	Parthenium incanum	0-2		
Tridens elongata	0-2	Krameria parvifolia	0-2		
Tridens muticus	0-2	Juniperus spp.	0-1		
Erioneuron pulchellum	0-2	Koeberlinia spinosa	0-1		
Annual grasses	0-2	Flourensia cernua	0-1		
Enneapogon desvauxii	0-1	Condalia spp.	0-1		
Sporobolus cryptandrus	0-1	Eurotia lanata	0-1		
Hilaria belangeri	0-1				

POTENTIAL VEGETATION AND PERCENT COMPOSITIONS FOR THE MIXED SHRUB ROLLING UPLANDS STANDARD HABITAT SITE

GRASSES	% COMP.	SHRUBS AND TREES	% COMP.	FORBS	% COMP.
Bouteloua eriopoda	17-23	Yucca spp.	3-6	Eriogonum spp.	3-7
Muhlenbergia porteri	8-13	Dasylirion Wheeleri	2-4	Perezia nana	3-7
Digitaria californica	4-11	Agave spp.	2-4	Psilostrophe tagetina	2-5
Bothriochloa barbinoides	4-11	Foquieria splendens	2-4	Sphaeralcea spp.	2-5
Hilaria mutica	6-10	Eurotia lanata	1-3	Baileya multiradiata	2-4
Setaria macrostachya	3-9	Gutierrezia sarothrae	1-3	Plantago patagonica	2-4
Bouteloua curtipendula	4-7	Opuntia spp.	1-3	Croton spp.	2-3
Sporobolus cryptandrus	4-6	Rhus microphylla	1-3	Mentzelia spp.	1-3
Aristida spp.	3-6	Nolina microcarpa	1-2	Euphorbia spp.	1-2
Sporobolus flexuosus	4-5	Acacia constricta	1-2	Dithyrea Wislizeni	1-2
Sporobolus contractus	4-5	Larrea divaricata	1-2	Erodium cicutarium	1-2
Bouteloua gracilis	3-5	Condalia spp.	1-2	Senecio spp.	0-1
Sporobolus giganteus	3-4	Ephedera trifurca	1-2	Astragalus spp.	0-1
Panicum obtusum	2-3	Artemisia filifolia	1-2	Solanum elaeagnifolium	0-1
Sporobolus airoides	2-3	Atriplex canescens	1-2	Salsola kali	0-1
Leptochloa dubia	1-2	Dalea scoparia	1-2	Descurainia spp.	0-1
Eragrostis intermedia	1-2	Prosopis glandulosa	0-1	Gaillardia spp.	0-1
Heteropogon contortus	1-2	Mimosa biuncifera	0-1		
Erioneuron pulchellum	1-2	Dalea formosa	0-1		
Scleropogon brevifolius	0-1	Parthenium incanum	0-1		
Tridens muticus	0-1	Krameria parvifolia	0-1		
Enneapogon desvauxii	0-1	Flourensia cernua	0-1		
Muhlenbergia Richardsonis	0-1	Baccharis pteronioides	0-1		
Chloris virgata	0-1	Chilopsis linearis	0-1		
Stipa neomexicana	0-1	Acacia greggii	0-1		
Muhlenbergia Metcalfei	0-1	Quercus turbinella	0-1		

POTENTIAL VEGETATION AND PERCENT COMPOSITIONS FOR THE MIXED SHRUB HILLS STANDARD HABITAT SITE

GRASSES	% COMP.	SHRUBS AND TREES	% COMP.	FORBS	% COMP.
Bouteloua eriopoda	25-30	Fouquieria splendens	5-9	Eriogonum spp.	1-5
Muhlenbergia porteri	11-14	Nolina microcarpa	3-7	Plantago patagonica	1-5
Bouteloua curtipendula	10-15	Agave spp.	3-7	Gaillardia spp.	0-2
Bouteloua gracilis	8-13	Dasylirion Wheeleri	3-7	Sphaeralcea spp.	0-2
Muhlenbergia Metcalfei	7-9	Yucca spp.	3-7	Descurainia spp.	0-1
Bothriochloa barbinoides	5-10	Rhus microphylla	1-4	Senecio spp.	0-1
Eragrostis intermedia	4-9	Dalea formosa	1-3	Perezia nana	0-1
Leptochloa dubia	4-9	Fallugia paradoxa	1-3		
Setaria macrostachya	3-5	Gutierrezia sarothrae	1-3		
Digitaria californica	2-6	Opuntia spp.	1-3		
Heteropogon contortus	2-5	Quercus turbinella	1-3		
Stipa neomexicana	2-5	Juniperus spp.	1-3		
Hilaria mutica	2-4	Aloysia Wrightii	1-2		
Aristida spp.	1-4	Parthenium incanum	1-2		
Tridens elongatus	1-3	Krameria parvifolia	1-2		
Tridens muticus	1-3	Atriplex canescens	0-1		
Erioneuron pulchellum	1-2	Rhus aromatica	0-1		
Panicum Hallii	0-1	Cercocarpus montanus	0-1		
Bouteloua hirsuta	0-1	Garrya Wrightii	0-1		
Andropogon scoparius	0-1	Chrysothamnus nauseosus	0-1		
Muhlenbergia montana	0-1	Baccharis pteronioides	0-1		
Muhlenbergia Emersleyi	0-1				
Muhlenbergia Wrightii	0-1				
Lycurus phleoides	0-1				
Koelaria cristata	0-1				
Sitanion hystrix	0-1				
Panicum obtusum	0-1				
Sporobolus airoides	0-1				

POTENTIAL VEGETATION AND PERCENT COMPOSITIONS FOR THE MIXED SHRUB MOUNTAIN STANDARD HABITAT SITE

GRASSES	% COMP.	SHRUBS AND TREES	% COMP.	FORBS	% COMP.
Bouteloua eriopoda	22-27	Fouquieria splendens	7-12	Plantago patagonica	1-5
Muhlenbergia porteri	11-17	Yucca spp.	6-11	Eriogonum spp.	1-5
Bouteloua gracilis	8-12	Dasylirion Wheeleri	6-11	Sphaeralcea spp.	1-3
Bouteloua curtipendula	8-12	Agave spp.	6-11	Gaillardia spp.	0-1
Bothriochloa barbinoides	5-9	Nolina microcarpa	2-5	Descurainia spp.	0-1
Muhlenbergia Metcalfei	5-6	Rhus microphylla	1-4	Salsola kali	0-1
Leptochloa dubia	4-9	Gutierrezia sarothrae	1-3	Perezia nana	0-1
Eragrostis intermedia	4-9	Quercus turbinella	1-3	Psilostrophe tagetina	0-1
Digitaria californica	4-8	Opuntia spp.	1-3	Croton spp.	0-1
Heteropogon contortus	3-7	Atriplex canescens	1-2	Phacelia spp.	0-1
Setaria macrostachya	2-4	Dalea formosa	0-2	Baileya multiradiata	0-1
Aristida spp.	1-4	Juniperus spp.	0-2	Mentzelia spp.	0-1
Annuals	1-4	Aloysia Wrightii	0-2		
Hilaria mutica	1-3	Fallugia paradoxa	0-2		
Stipa neomexicana	1-3	Parthenium incanum	0-2		
Tridens elongatus	1-3	Krameria parvifolia	0-1		
Tridens muticus	1-3	Larrea divaricata	0-1		
Panicum Hallii	1-2	Pluchea sericea	0-1		
Erioneuron pulchellum	1-2				
Sporobolus flexuosus	0-1				
Sporobolus cryptandrus	0-1				
Other perennials	0-2				

POTENTIAL VEGETATION AND PERCENT COMPOSITIONS FOR THE HALF SHRUB ROLLING UPLAND STANDARD HABITAT SITE

GRASSES	% COMP.	SHRUBS AND TREES	% COMP.	FORBS	% COMP.
Bouteloua eriopoda	24-32	Ephedera trifurca	4-8	Eriogonum spp.	5-9
Sporobolus flexuosus	8-12	Yucca elata	3-7	Perezia nana	4-9
Sporobolus cryptandrus	8-12	Atriplex canescens	1-4	Croton spp.	4-8
Sporobolus contractus	7-9	Ceratoides lanata	1-4	Baileya multiradiata	4-8
Muhlenbergia porteri	5-10	Gutierrezia sarothrae	1-3	Erodium cicutarium	3-7
Setaria macrostachya	4-9	Opuntia spp.	1-2	Sphaeralcea spp.	3-6
Digitaria californica	4-8	Artemisia filifolia	0-2	Euphorbia spp.	2-5
Bothriochloa barbinoides	4-8	Dalea scoparia	0-2	Dithyrea Wislizeni	2-5
Hilaria mutica	3-8	Larrea divaricata	1	Salsola kali	2-5
Aristida spp.	3-8	Agave spp.	0-1	Psilostrophe tagetina	2-4
Sporobolus airoides	3-4	Koeberlinia spinosa	0-1	Senecio spp.	1-3
Sporobolus giganteus	2-3	Flourensia cernua	0-1	Astragalus spp.	1-3
Erioneuron pulchellum	1-4	Rhus microphylla	0-1	Solanum elaeagnifolium	0-2
Bouteloua curtipendula	1-2	Condalia spp.	0-1	Descurainia spp.	0-2
Bouteloua gracilis	1-2	Dasylirion Wheeleri	0-1	Asclepias subverticillata	0-1
Panicum obtusum	1-2	Yucca spp.	0-1	Mentzelia spp.	0-1
Scleropogon brevifolius	0-1	Fallugia paradoxa	0-1	Plantago patagonica	0-1
Hilaria belangeri	0-1				
Tridens spp.	0-1				
Eragrostis intermedia	0-1				
Leptochloa dubia	0-1				
Heteropogon contortus	0-1				
Panicum Hallii	0-1				

POTENTIAL VEGETATION AND PERCENT COMPOSITIONS FOR THE GRASS ROLLING UPLANDS STANDARD HABITAT SITE

GRASSES	% COMP.	SHRUBS AND TREES	% COMP.	FORBS	% COMP.
Bouteloua eriopoda	20-25	Yucca elata	1-5	Baileya multiradiata	2-5
Hilaria mutica	8-13	Ephedera trifurca	1-5	Perezia nana	2-5
Muhlenbergia porteri	6-9	Dasylirion Wheeleri	2-3	Eriogonum spp.	2-5
Sporobolus airoides	6-8	Agave spp.	2-3	Sphaeralcea spp.	1-4
Aristida spp.	3-7	Foquieria splendens	2-3	Croton spp.	1-3
Bothriochloa barbinoides	3-7	Atriplex canescens	1-3	Erodium cicutarium	1-3
Sporobolus cryptandrus	4-6	Gutierrezia sarothrae	1-3	Astragalus spp.	1-3
Sporobolus flexuosus	4-6	Opuntia spp.	1-2	Salsola kali	1-2
Bouteloua gracilis	4-6	Eurotia lanata	0-2	Senecio spp.	1-2
Bouteloua curtipendula	4-6	Dalea formosa	0-1	Plantago patagonica	1-2
Digitaria californica	2-6	Nolina microcarpa	0-1	Psilostrophe tagetina	1-2
Setaria macrostachya	2-5	Rhus microphylla	0-1	Euphorbia spp.	0-1
Sporobolus contractus	2-3	Quercus turbinella	0-1	Dithyrea Wislizeni	0-1
Panicum obtusum	2-3	Artemisia filifolia	0-1	Salanum elaeagnifolium	0-1
Sporobolus giganteus	2-3	Dalea scoparia	0-1	Descurainia spp.	0-1
Erioneuron pulchellum	1-3	Prosopis glandulosa	0-1	Lesquerella spp.	0-1
Muhlenbergia torreyi	1-2	Acacia constricta	0-1	Other perennials	2-6
Scleropogon brevifolius	1-2	Flourensia cernua	0-1	Other annuals	1-3
Stipa neomexicana	1-2	Fallugia paradoxa	0-1		
Leptochloa dubia	1-2	Condalia spp.	0-1		
Eragrostis intermedia	1-2	Lycium spp.	0-1		
Stanion hystrix	1-2				
Panicum Hallii	0-1				
Heteropogon contortus	0-1				
Muhlenbergia Richardsonis	0-1				
Bouteloua hirsuta	0-1				
Hilaria Jamesii	0-1				
Agropyron Smithii	0-1				
Stipi spp.	0-1				
Andropogon scoparius,	0-1				
Annual grasses	1-2				

POTENTIAL VEGETATION AND PERCENT COMPOSITIONS FOR THE GRASS HILL STANDARD HABITAT SITE

GRASSES	% COMP.	SHRUBS AND TREES	% COMP.	FORBS	% COMP.
Bouteloua eriopoda	15-20	Fouquieria splendens	4-6	Eriogonum Wrightii	1-5
Bouteloua curtipendula	11-16	Yucca spp.	3-6	Plantago patagonica	1-3
Bouteloua gracilis	10-14	Dasylirion Wheeleri	3-6	Castilleja spp.	0-2
Bothriochloa barbinoides	5-10	Agave spp.	3-6	Eriogonum spp.	0-2
Leptochloa dubia	5-10	Nolina microcarpa	2-4	Sphaeralcea spp.	0-2
Eragrostis intermedia	5-10	Fallugia paradoxa	1-3	Gaillardia spp.	0-2
Muhlenbergia porteri	5-8	Rhus aromatica	1-3	Descurainia spp.	0-1
Andropogon scoparius	4-7	Dalea formosa	1-3	Senecio spp.	0-1
Sitanion hystrix	4-7	Rhus microphylla	1-3		
Agropyron Smithii	3-5	Quercus turbinella	1-3		
Stipa spp.	3-5	Garrya Wrightii	1-2		
Digitaria californica	2-5	Cercocarpus montanus	1-2		
Heteropogon contortus	2-5	Gutierrezia sarothrae	1-2		
Muhlenbergia Metcalfei	2-3	Juniperus spp.	1-2		
Hilaria mutica	1-4	Baccharis pteronioides	0-2		
Panicum Hallii	1-4	Cetatoides lanata	0-2		
Aristida spp.	1-4	Lycium spp.	0-2		
Hilaria belangeri	1-3	Artemisia Bigelovii	0-1		
Stipa neomexicana	1-3	Atriplex canescens	0-1		
Setaria macrostachya	1-2	Opuntia spp.	0-1		
Bouteloua hirsuta	0-2	Aloysia Wrightii	0-1		
Hilaria Jamesii	0-2	Parthenium incanum	0-1		
Panicum obtusum	0-1	Krameria parvifolia	0-1		
Tridens elongatus	0-1	Chrysothamnus nauseosus	0-1		
Tridens muticus	0-1				
Erioneuron pulchellum	0-1				
Muhlenbergia montana	0-1				
Muhlenbergia Emersleyi	0-1				
Muhlenbergia Wrightii	0-1				
Lycurus phleoides	0-1				
Koelaria cristata	0-1				

POTENTIAL VEGETATION AND PERCENT COMPOSITIONS FOR THE GRASS MOUNTAIN STANDARD HABITAT SITE

GRASSES	% COMP.	SHRUBS AND TREES	% COMP.	FORBS	% COMP.
Bouteloua eriopoda	20-25	Yucca spp.	7-11	Eriogonum spp.	2-6
Bouteloua curtipendula	13-17	Dasylirion Wheeleri	7-10	Plantago patigonica	1-5
Bouteloua gracilis	10-15	Agave spp.	7-10	Sphaeralcea spp.	1-3
Muhlenbergia porteri	8-12	Fouquieria splendens	7-10	Perezia nana	0-1
Bothriochloa barbinoides	4-9	Nolina microcarpa	2-4	Bailey multiradiata	0-1
Digitaria californica	4-8	Quercus turbinella	1-4	Psilostrophe tagetina	0-1
Leptochloa dubia	4-7	Gutierrezia sarothrae	1-3	Haplopappus spp.	0-1
Eragrostis intermedia	4-7	Rhus microphylla	1-3	Senecio spp.	0-1
Heteropogon contortus	3-6	Opuntia spp.	1-3		
Stipa neomexicana	2-5	Atriplex canescens	1-2		
Aristida spp.	2-4	Juniperus monosperma	0-3		
Hilaria mutica	1-5	Ceanothus Greggii	0-1		
Panicum Hallii	1-2	Cercocarpus montanus	0-1		
Tridens spp.	1-2	Dalea formosa	0-2		
Andropogon scoparius	0-1	Baccharis pteronioides	0-1		
Setaria macrostachya	0-1	Fallugia paradoxa	0-1		
Panicum obtusum	0-1	Lycium spp.	0-1		
Bouteloua hirsuta	0-1	Ceratoides lanata	0-1		
Sporobolus cryptandrus	0-1	Rhus aromatica	0-1		
Muhlenbergia montana	0-1	Garrya Wrightii	0-1		
Muhlenbergia Emersleyi	0-1				
Muhlenbergia Wrightii	0-1				
Sitanion hystix	0-1				

POTENTIAL VEGETATION AND PERCENT COMPOSITIONS FOR THE GRASS FLAT STANDARD HABITAT SITE

GRASSES	% COMP.	SHRUBS AND TREES	% COMP.	FORBS	% COMP.
Hilaria mutica	21-28	Rhus microphylla	2-5	Perezia nana	2-6
Sporobolus airoides	17-22	Chilopsis linearis	2-4	Croton spp.	2-4
Panicum obtusum	11-14	Condalia spp.	2-4	Salsola kali	1-4
Sporobolus giganteus	11-14	Acacia Greggii	2-4	Sphaeralcea spp.	1-3
Bouteloua eriopoda	8-11	Acacia constricta	2-4	Astragalus spp.	1-3
Bothriochloa barbinoides	3-7	Atriplex canescens	1-4	Eriogonum spp.	1-2
Digitaria californica	3-6	Gutierrezia sarothrae	1-4	Lesquerella spp.	1-2
Aristida spp.	2-6	Yucca elata	1-4	Baileya multiradiata	1-2
Bouteloua curtipendula	2-5	Ephedera trifurca	1-4	Erodium cicutarium	1-2
Sporobolus cryptandrus	2-4	Koeberlinia spinosa	1-2	Verbena spp.	0-1
Sporobolus flexuosus	2-4	Prosopis glandulosa	1-2	Phacelia spp.	0-1
Muhlenbergia porteri	2-3	Flourensia cernua	0-2	Plantago patagonica	0-1
Scleropogon brevifolius	1-5	Fallugia paradoxa	0-1	Annual Eriogonum spp.	0-1
Muhlenbergia Richardsonis	1-4	Optunia spp.	0-1	Senecio spp.	0-1
Setaria macrostachya	1-4	Yucca spp.	0-1	Euphorbia spp.	0-1
Chloris virgata	1-3			Dithyrea Wislizeni	0-1
Sporobolus contractus	1			Psilostrophe tagetina	0-1
Eragrostis intermedia	0-1				
Muhlenbergia torreyi	0-1				
Erioneuron pulchellum	0-1				

POTENTIAL VEGETATION AND PERCENT COMPOSITIONS FOR THE MALPAIS STANDARD HABITAT SITE

GRASSES	% COMP.	SHRUBS AND TREES	% COMP.	FORBS	% COMP.
Bouteloua eriopoda	20-25	Atriplex canescens	1-5	Annuals	1-5
Bouteloua curtipendula	10-15	Fallugia paradoxa	1-5	Perennials	1-3
Muhlenbergia porteri	5-10	Condalia spp.	1-5		
Bouteloua gracilis	5-10	Rhus microphylla	1-5		
Hilaria belangeri	5-10	Yucca spp.	1-5		
Hilaria mutica	5-10	Dasylirion Wheeleri	1-5		
Eragrostis intermedia	5-10	Agave spp.	1-5		
Leptochloa dubia	5-10	Opuntia spp.	0-1		
Setaria macrostachya	5-10	Ceratoides lanata	0-3		
Bothriochloa barbinoides	5-10	Gutierrezia sarothrae	0-3		
Digitaria californica	5-10				
Heteropogon contortus	5-10				
Aristida spp.	5-10				
Tridens spp.	5-10				
Panicum Hallii	5-10				
Panicum obtusum	5-10				

POTENTIAL VEGETATION AND PERCENT COMPOSITIONS FOR THE PROSOPIS JULIFLORA ROLLING UPLAND STANDARD HABITAT SITE

GRASSES	% COMP.	SHRUBS AND TREES	% COMP.	FORBS	% COMP.
Bouteloua eriopoda	20-27	Yucca elata	3-8	Eriogonum spp.	4-8
Hilaria mutica	8-13	Ephedera trifurca	3-8	Perezia nana	4-8
Sporobolus flexuosus	8-12	Atriplex canescens	1-4	Baileya multiradiata	4-7
Sporobolus cryptandrus	8-12	Eurotia lanata	1-4	Erodium cicutarium	3-7
Sporobolus airoides	8-10	Gutierrezia sarothrae	1-3	Croton spp.	3-7
Sporobolus contractus	7-9	Rhus microphylla	1-2	Sphaeralcea spp.	3-5
Sporobolus giganteus	7-9	Opuntia spp.	1-2	Euphorbia spp.	2-5
Muhlenbergia porteri	4-7	Artemisia filifolia	0-2	Dithyrea Wislizeni	2-5
Setaria macrostachya	3-7	Dalea scoparia	0-2	Salsola kali	1-4
Digitaria californica	3-7	Koeberlinia spinosa	0-1	Astragalus spp.	1-4
Bothriochloa barbinoides	3-7	Flourensia cernua	0-1	Senecio spp.	1-3
Aristida spp.	3-7	Fallugia paradoxa	0-1	Psilostrophe tagetina	1-2
Panicum obtusum	5-6	Chilopsis linearis	0-1	Solanum elaeagnifolium	0-2
Erioneuron pulchellum	1-3	Condalia spp.	0-1	Descurainia spp.	0-2
Bouteloua curtipendula	1-2	Acacia greggii	0-1	Asclepias subverticillata	0-1
Scleropogon brevifolius	0-2	Acacia constricta	0-1	Lesquerella spp.	0-1
Chloris virgata	0-1			Purshia patagonica	0-1
Muhlenbergia Richardsonis	0-1			Mentzelia spp.	0-1
Eragrostis intermedia	0-1				
Bouteloua gracilis	0-1				
Annual grasses	1-5				

POTENTIAL VEGETATION AND PERCENT COMPOSITIONS FOR THE PROSOPIS JULIFLORA DUNES STANDARD HABITAT SITE

GRASSES	% COMP.	SHRUBS AND TREES	% COMP.	FORBS	% COMP.
Bouteloua eriopoda	21-30	Yucca elata	4-9	Croton spp.	4-9
Sporobolus flexuosus	14-19	Ephedera trifurca	4-9	Eriogonum spp.	4-9
Sporobolus cryptandrus	14-19	Atriplex canescens	2-5	Perezia nana	4-9
Sporobolus contractus	14-18	Artemisia filifolia	1-5	Baileya multiradiata	4-9
Muhlenbergia porteri	4-9	Dalea scoparia	1-5	Erodium cicutarium	4-9
Setaria macrostachya	4-8	Eurotia lanata	1-4	Sphaeralcea spp.	4-8
Aristida spp.	4-8	Opuntia spp.	1-3	Euphorbia spp.	4-8
Digitaria californica	4-7	Gutierrezia sarothrae	1-3	Dithyrea Wislizeni	4-8
Bothriochloa barbinoides	4-7			Salsola kali	1-5
Sporobolus gigantea	4-5			Senecio spp.	1-4
Annual grasses	1-5			Astragalus spp.	1-4
Hilaria mutica	1-4			Solanum elaeagnifolium	1-4
Erioneuron pulchellum	1-4			Descurainia spp.	1-4
				Psilostrophe tagetina	1-2
				Plantago patagonica	0-1
				Lesquerella spp.	0-1
				Gaillardia spp.	0-1
				Other annuals	1-5
				Other perennials	1-5

POTENTIAL VEGETATION AND PERCENT COMPOSITIONS FOR THE PSEUDORIPARIAN STANDARD HABITAT SITE

GRASSES	% COMP.	SHRUBS AND TREES	% COMP.	FORBS	% COMP.
Hilaria mutica	13-18	Larrea divaricata	5-8	Perezia nana	3-7
Sporobolus airoides	11-14	Rhus microphylla	2-4	Croton spp.	3-7
Sporobolus cryptandrus	9-12	Chilopsis linearis	2-3	Psilostrophe tagetina	3-5
Sporobolus flexuosus	9-12	Condalia spp.	2-3	Salsola kali	2-5
Panicum obtusum	8-11	Acacia greggii	2-3	Phacelia spp.	2-5
Sporobolus gigantea	8-11	Acacia constricta	2-3	Descurainia spp.	2-4
Bouteloua eriopoda	6-10	Atriplex canescens	1-4	Sphaeralcea spp.	1-2
Muhlenbergia porteri	5-9	Ephedera trifurca	1-3	Eriogonum spp.	1-2
Bothriochloa barbinoides	2-6	Gutierrezia sarothrae	1-3	Verbena spp.	0-1
Digitaria californica	2-6	Fallugia paradoxa	1-3	Plantago patagonica	0-1
Erioneuron pulchellum	2-5	Koeberlinia spinosa	1-2	Astragalus spp.	0-1
Bouteloua curtipendula	2-4	Pluchea sericea	0-4	Lesquerella spp.	0-1
Aristida spp.	1-5	Prosopis glandulosa	0-2	Euphorbia spp.	0-1
Setaria macrostachya	1-5	Yucca spp.	0-2	Dithyrea Wislizeni	0-1
Scleropogon brevifolius	1-3	Yucca elata	0-1	Baileya multiradiata	0-1
Sporobolus contractus	0-1	Flourensia cernua	0-1	Erodium cicutarium	0-1
Muhlenbergia Richardsonis	0-2			Other perennials	3-9
Chloris virgata	0-2			Other annuals	2-5
Eragrostis intermedia	0-1				
Enneapogon desvauxii	0-1				
Other perennials	0-2				
Other annuals	0-2				

BUREAU OF LAND MANAGEMENT - LAS CRUCES DISTRICT

VERTEBRATE SPECIES OCCURRENCE LIST BY STANDARD HABITAT SITE

COMMON NAME	SCIENTIFIC NAME	Latr Rup	Latr Breaks	Latr Hill	Mxsh Mountain	Mxsh Hill	Mxsh Rup	Hash Rup	Grass Rup	Grass Hill	Grass Mountain	Grass Flat	Malpais	Prju Rup	Prju Dunes	Pinyon-Juniper	Pseudoriparian	Riparian Forest	Riparian Woodland	Stock Tank	No Preferred Habitat
HERPTILES: Nomenclature in accordance with Stebbine (1954, 1966).																					
tiger salamander*	Ambystoma tigrinum								1	1	1	1	3					2	3	1	
plains spadefoot	Scaphiopus bombifrons																			2	
western spadefoot*	Scaphiopus hammondi	3	3	3	5	5		4								6		2	2	1	
Couch's spadefoot	Scaphiopus couchi	1	2	3					3	3	3	3	4								
great plains toad*	Bufo cognatus	2	2	2	1	1	2	3	4	4	4	4		3			1		1		
Texas toad*	Bufo speciosus	4	4	4					3	3		3						2	2	1	
red-spotted toad*	Bufo punctatus								3	3	3	3		1	2		2				
green toad*	Bufo debilis	1	1	1					2	2	2	2	3	4			1				
Woodhouse's toad	Bufo Woodhousei								3	3		3						2	1	2	
canyon tree frog	Hyla arenicolor																4	1	2	3	
leopard frog*	Rana pipens																	1	1	1	
bull frog*	Rana catesbiana																	1	1	1	
spiny softshell	Trylonyx spiniferus																	1	1	2	
western box turtle*	Terrapene ornata	4	4	4	4	4	4		2	2	3	2		1	5		2				
painted turtle	Chrysemys picta																	1	1	2	
pond slider	Pseudemys scripta																	2	2	1	
yellow mud turtle*	Kinosternon flavescens																	2	1	1	
Texas banded gecko	Coleonyx brevis				1	1	1		3	3	2	3				2					
great plains skink	Eumeces obsoletus	5	5	5	2	2	3	3	3	3	2	3	4			2		1	1		
many-lines skink	Eumeces multivirgatus	2	2	2	2	2	2	2	1	1	1	1	4	5		3	2	1	1		
western whiptail*	Cnemidophorus tigris	2	2	2	2	2	2	1	5	5	5	5	6	3		5	3	4	4		
checkered whiptail*	Cnemidophorus tesselatus	1	1	1					3	3	3	3		2	4						
New Mexican whiptail*	Cnemidophorus neomexicanus	6	6	6	5	5	5	4	3	3	5	2					1				
Chihuahua whiptail*	Cnemidophorus exsanguis	5	5	5	3				3	3	1	3	4			1		2	2		

Numerals represent the Standard Habitat Sites (SHS) in which species occur and reflect the relative quality of habitat provided for each species by each SHS. Numeral 1 represents the highest quality of habitat found within the Las Cruces District, while larger numerals indicate relative decreases in habitat quality.

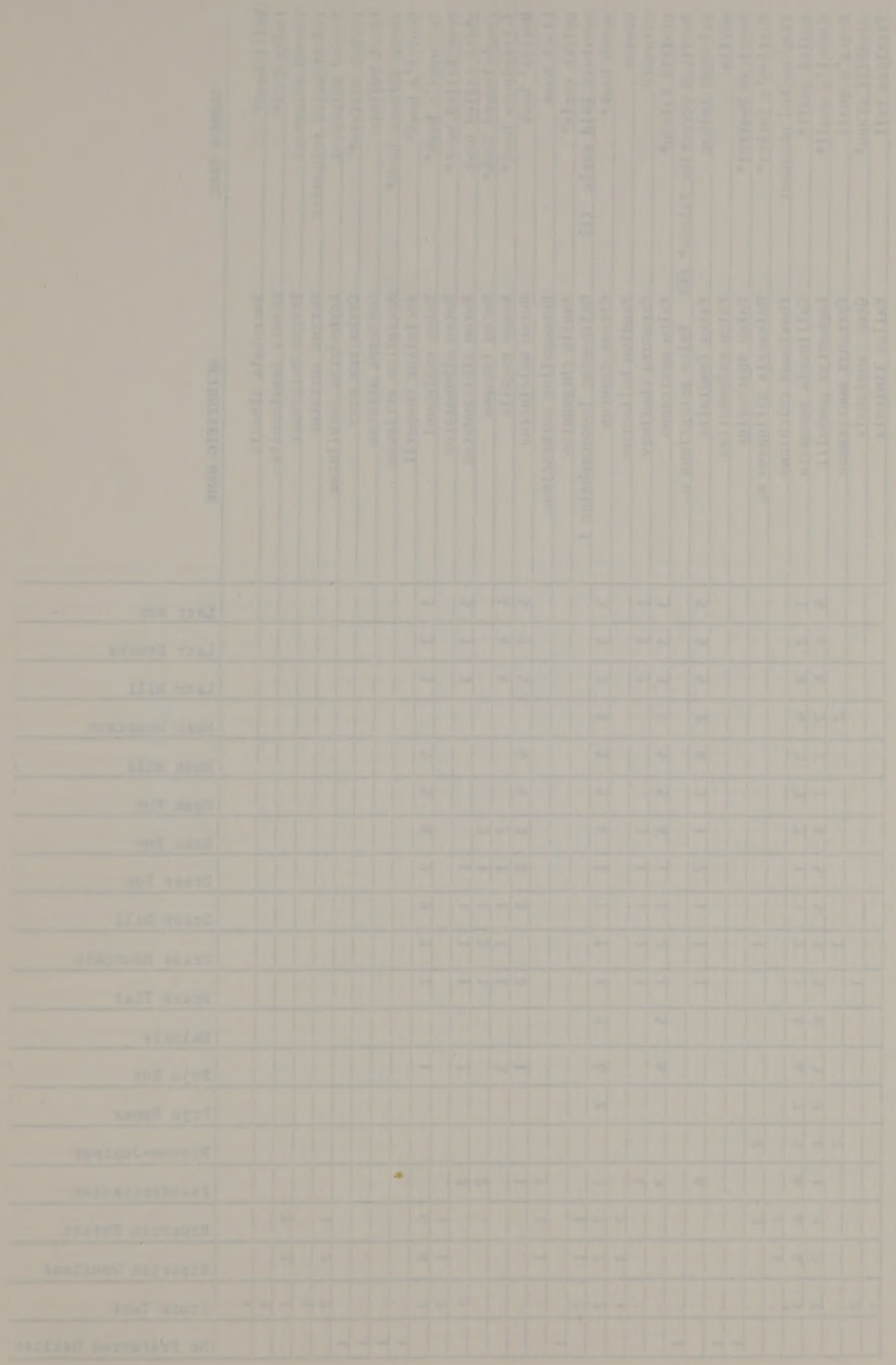
* Species observed during the wildlife inventory.
(E) Endangered species.

COMMON NAME	SCIENTIFIC NAME	Latr Rup	Latr Breaks	Latr Hill	Mxsh Mountain	Mxsh Hill	Mxsh Rup	Hash Rup	Grass Rup	Grass Hill	Grass Mountain	Grass Flat	Malpais	Prju Rup	Prju Dunes	Pinyon-Juniper	Pseudoriparian	Riparian Forest	Riparian Woodland	Stock Tank	No Preferred Habitat
desert-grassland whiptail*	Cnemidophorus uniparens	6	6	6	3	3	3	1	4	4	4	4	5	2	5		1		3		
little striped whiptail*	Cnemidophorus inornatus							1	3	3	2	3				2	4	5	4		
plateau whiptail*	Cnemidophorus velox										3					1		2	4		
round-tailed horned lizard*	Phrynosoma modestum	1	2	2	5	5	5	3	3	3	3	3	6	4			2				
short-horned lizard*	Phrynosoma douglassi	3	3	3	1	2	2				4					2					
Texas horned lizard*	Phrynosoma cornatum	3	3	3	6	5	5	4	2	2	2	1		6		7	3				
greater earless lizard*	Holbrookia texana	4	4	4	6	6	6	5	1	1	1	1					3	2	2		
lesser earless lizard*	Holbrookia maculata							3	2	2	2	2		2	1		4				
Clark's spiny lizard	Sceloporus clarki				4											3		2	1		
desert spiny lizard*	Sceloporus magister	3	3	3				4	2	2	1	2				6	5		5		
sagebrush lizard*	Sceloporus graciosus	1		3												2					
crevice spiny lizard*	Sceloporus poinsetti	3	3	3									2	4			1			4	
eastern fence lizard*	Sceloporus undulatus	1	1	1	2	2	2								4	3					
collared lizard*	Crotaphytus collaris	2	2	2	3	3	3		1	1	4	1	1	5			4				
leopard lizard*	Crotaphytus wislizenii	1	1	1	3	3	3	4	4	4	4	4	2	2	2	3		3			
tree lizard*	Urosaurus ornatus	4	4	4	4	4	4		5	5	5	5				2	3	1	1	5	
side-blotched lizard*	Uta Stansburiana	2	2	2	6	6	6	4	3	3	7	3	8	5	1		8				
Texas blind snake	Leptotyphlops dulcis	3	3	3		4	4	5	2	2	1	2					3				
western blind snake	Leptotyphlops humilis	1	1	1					2	2	2	2					4		3		
massasauga	Sistrurus catenatus					3	3	1	2	2		2						3	3		
rock rattlesnake*	Crotalus lepidus				1			2			2					2					
western diamondback rattlesnake*	Crotalus atrox	1	1	1	4	3	3		2	2	2	2		5	2		3	3	3	5	
mojave rattlesnake*	Crotalus scutulatus	1	1	1					2	2	2	2					1	3	3		
prairie rattlesnake*	Crotalus viridis	3	3	3	4	4	4	5	2	2	2	1	4	3		5	3	3	3		
black-tailed rattlesnake*	Crotalus molossus	2	2	2	1	1	1		4	4	3	4				3					
western hognose snake*	Heterodon nasicus	5	5	5		4	4	4	3	3		3	6	2			1		1		
smooth green snake	Opheodrys vernalis								3	2	2	3						1	1		
corn snake	Elaphe guttata															2		1	1		
Trans-Pecos rat snake	Elaphe subocularis	3	3	2				1	4	4		4					2				
gopher snake*	Pituophis melanoleucus	1	1	1	5	5	5	4	3	3	3	3		2		5	4		5	6	
checkered garter snake	Thamnophis marcianus								2	2	2	2				3	4	1	1		
common garter snake*	Thamnophis sirtalis																3	1	1	2	
western terrestrial garter snake	Thamnophis elegans				4				3	3	3	3				5	2	1	1		

COMMON NAME	SCIENTIFIC NAME	Latr Rup	Latr Breaks	Latr Hill	Mxsh Mountain	Mxsh Hill	Mxsh Rup	Hash Rup	Grass Rup	Grass Hill	Grass Mountain	Grass Flat	Malpais	Prju Rup	Prju Dunes	Pinyon-Juniper	Pseudoriparian	Riparian Forest	Riparian Woodland	Stock Tank	No Preferred Habitat
black-necked garter snake*	Thamnophis cyrtopsis															3	2	1	1		
long-nosed snake	Rhinocheilus lecontei	1	1	1				4	2	2	2	2					3				
Texas lyre snake	Trimorphodon vilkinsoni	1	1	1				4	2	2	2	2				4	3				
glossy snake	Arizona elegans	4	4	4	1				3	3	2	3				2					
milk snake	Lampropeltis triangulum				3				3	3	3	3			4	2		1	1		
common kingsnake	Lampropeltis getulus				2				3	3	2	3				4		1	1		
mountain patch-nosed snake	Salvadora grahamiae				2						2					2		1			
western patch-nosed snake*	Salvadora hexalepis				1	4				4	1			3		2		1			
coach whip*	Masticophis flagellum	2	2	2					3	3	3	3		1			2				
Sonora whipsnake	Masticophis bilineatus	3	3	3	1	1	1	2								4		2	2		
striped whipsnake*	Masticophis taeniatus	4	4	4	2	5	5	6	3	3	2	3	4			1					
ringneck snake	Diadophis punctatus					5			5	5	4	5				4	3	2	1		
western ground snake	Sonora semiannulata	4	4	4					2	2		2		3			1	2	1		
western black-headed snake	Tantilla planiceps	5	5	5	3	1	1		4	4	2	4		3			2		3		
plains black-headed snake*	Tantilla nigriceps	3	3	1		4	4	4	2	2	3	2					3				
western hook-nosed snake	Ficimia cana	2	2	2	4	5	5	5	1	1	1	1	4			3	2				
night snake	Hypsiglena torquata				3				1	1	1	1				2		2			
BIRDS: Nomenclature in accordance with Ligon(1961) and Robbins, Bruun, and Zim(1966).																					
common loon	Gavia immer																			1	
least grebe	Podiceps dominicus																			1	
horned grebe	Podiceps auritus																			1	
eared grebe*	Podiceps caspicus																			1	
pied-billed grebe*	Podilymbus podiceps																			1	
western grebe	Aechmophorus occidentalis																			1	
white pelican*	Pelecanus erythrorhynchos																	2	2	1	
double-crested cormorant*	Phalacrocorax auritus																	1	1	1	
olivaceous cormorant	Phalacrocorax olivaceus																	1	1	1	
anhinga	Anhinga anhinga																	1	1	1	
magnificent frigatebird*	Fregata magnificens																				1

COMMON NAME	SCIENTIFIC NAME	Latr Rup	Latr Breaks	Latr Hill	Mxsh Mountain	Mxsh Hill	Mxsh Rup	Hash Rup	Grass Rup	Grass Hill	Grass Mountain	Grass Flat	Malpais	Prju Rup	Prju Dunes	Pinyon-Juniper	Pseudoriparian	Riparian Forest	Riparian Woodland	Stock Tank	No Preferred Habitat
great blue heron*	Ardea herodias																	1	1	1	
little blue heron	Florida caerulea																	1	1	1	
green heron	Butorides virescens																	1	1	2	
common egret	Casmerodius albus																	1	1	2	
snowy egret*	Leucophoyx thula																	2	2	1	
black-crowned night heron*	Nycticorax nycticorax																	1	1	2	
least bittern	Ixobrychus exilis																	2	2	1	
American bittern*	Botaurus lentiginosus																	2	2	1	
wood ibis	Mycteria americana																	2	2	1	
white-faced ibis*	Plegadis chihi																	2	2	1	
whistling swan	Olor columbianus																	2		1	
Canada goose	Branta canadensis																	2		1	
white-fronted goose	Anser albifrons																	2		1	
snow goose	Chen hyperborea																	2		1	
Ross' goose	Chen rossi																	2		1	
fulvous tree duck	Dendrocygna bicolor																	1	1	2	
mallard*	Anas platyrhynchos																	2	2	1	
Mexican duck*	Anas diazi																	2	2	1	
gadwall*	Anas strepera																	2	2	1	
pintail*	Anas acuta																	2	2	1	
green-winged teal*	Anas carolinensis																	2	2	1	
blue-winged teal*	Anas discors																	2	2	1	
cinnamon teal*	Anas cyanoptera																	2	2	1	
American wigeon*	Mareca americana																	2	2	1	
European wigeon*	Mareca penelope																	2	2	1	
northern shoveler*	Spatula clypeata																	2	2	1	
wood duck*	Aix sponsa																	1	2	2	
redhead	Aythya americana																			1	
ring-necked duck	Aythya collaris																			1	
canvasback	Aythya valisineria																			1	
lesser scaup	Aythya affinis																			1	
greater scaup	Aythya marila																			1	
common goldeneye	Bucephala clangula																	2	2	1	

COMMON NAME	SCIENTIFIC NAME	Latr Rup	Latr Breaks	Latr Hill	Mxsh Mountain	Mxsh Hill	Mxsh Rup	Hash Rup	Grass Rup	Grass Hill	Grass Mountain	Grass Flat	Malpais	Prju Rup	Prju Dunes	Pinyon-Juniper	Pseudoriparian	Riparian Forest	Riparian Woodland	Stock Tank	No Preferred Habitat
bufflehead*	Bucephala albeola																			1	
ruddy duck*	Oxyura jamaicensis																			1	
common merganser	Mergus merganser																	2	2	1	
red-breasted merganser	Mergus serrator																			1	
hooded merganser	Lophodytes cucullatus																	1	2	2	
turkey vulture*	Cathartes aura																				1
black vulture	Coragyps atratus																				1
sharp-shinned hawk*	Accipiter striatus																				1
Cooper's hawk*	Accipiter cooperii																				1
Swainson's hawk*	Buteo swainsoni	3	3	3		5	5	4	2	2	2	2		1				6	6	7	
zone-tailed hawk*	Buteo albonotatus																	1	1	2	
white-tailed hawk	Buteo albicaudatus	3	3	3					1	1	1	1		2			2				
rough-legged hawk*	Buteo lagopus							3	1	1	2	1					2				
ferruginous hawk*	Buteo regalis	4	4	4				2	1	1	1	1		3							
Harris' hawk	Buteo unicinctus	5	5	5		4	4	3	2	2		2		1			1				
black hawk	Buteogallus anthracinus																2	1	1		
golden eagle*	Aquila chrysaetos																				1
southern bald eagle (E)	Haliaeetus leucocephalus l.																	1	1	2	
marsh hawk*	Circus cyaneus	3	3	3	5	5	5	4	1	1	1	1	3	6	2		3	7	7	2	
osprey	Pandion haliaetus																	2	3	1	
caracara	Caracara cheriway	2	2	2				3	1	1	1	1					4				
prairie falcon*	Falco mexicanus	3	3	3	5	5	5	4	1	1	2	1	5	6			3				
American peregrine falcon* (E)	Falco peregrinus a.																				1
aplomado falcon	Falco femoralis	5	5	5	2	4	3	1	2	1	1	1					6				
merlin	Falco columbarius																				1
American kestrel*	Falco sparverius																				1
Merriam's turkey*	Meleagris gallopavo m.										1					2		3			
ring-necked pheasant	Phasianus colchicus																	1	1		
scaled quail*	Callipepla squamata	1	2	2	4	3	3	2	1	1	2	1	4	4	2	5	6	6	6	7	
Gambel's quail*	Lophortyx gambelii	6	6	6	7	7	7	6	5	5	5	5	6	3	7	4	1	2	2	2	
Mearn's quail	Cyrtonyx montezumae				2						1					2					
sandhill crane*	Grus canadensis											1								2	
Virginia rail	Rallus limicola																			1	



COMMON NAME	SCIENTIFIC NAME	Latr Rup	Latr Breaks	Latr Hill	Mxsh Mountain	Mxsh Hill	Mxsh Rup	Hash Rup	Grass Rup	Grass Hill	Grass Mountain	Grass Flat	Malpais	Prju Rup	Prju Dunes	Pinyon-Juniper	Pseudoriparian	Riparian Forest	Riparian Woodland	Stock Tank	No Preferred Habitat
sora*	Porzana carolina																	2	2	1	
common gallinule*	Gallinula chloropus																	2	2	1	
American coot*	Fulica americana																	2	2	1	
semipalmated plover	Charadrius semipalmatus																	2	2	1	
snowy plover	Charadrius alexandrinus																	2	2	1	
killdeer*	Charadrius vociferus	3	4	3					4			3						2	2	1	
mountain plover	Eupoda montana				3			2	1	1	1	1					2				
black-bellied plover	Squatarola squatarola							3	2	2	2	2					2			1	
common snipe*	Capella gallinago																	2	2	1	
long-billed curlew*	Numenius americanus							3				2							2	1	
whimbrel*	Numenius phaeopus											2					3			1	
upland plover	Bartramia longicauda							4	2	2	3	1						1			
spotted sandpiper*	Actitis macularia																	2	2	1	
solitary sandpiper*	Tringa solitaria																	2	2	1	
willet*	Catoptrophorus semepalmatus																	2	2	1	
greater yellowlegs*	Totanus melanoleucus																			1	
lesser yellowlegs*	Totanus flavipes																			1	
stilt sandpiper	Micropalama himantopus																			1	
pectoral sandpiper*	Erolia melanotos																			1	
Baird's sandpiper	Erolia bairdii																			1	
white-rumped sandpiper	Erolia fuscicollis																			1	
semipalmated sandpiper*	Ereunetes pusillus																			1	
least sandpiper*	Erolia minutilla																			1	
dunlin	Erolia alpina																			1	
long-billed dowitcher*	Limnodromus scolopaceus																	1	1	2	
western sandpiper*	Ereunetes mauri																	2	2	1	
marbled godwit*	Limosa fedoa								4	4		3	5					1	1	2	
sanderling	Crocethia alba																			1	
American avocet*	Recurvirostra americana																	2	2	1	
black-necked stilt*	Himantopus mexicanus																	2	2	1	
Wilson's phalarope*	Steganopus tricolor																	2	2	1	
northern phalarope*	Lobipes lobatus																			1	
herring gull	Larus argentatus																			1	

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Thayer's gull	Larus thayeri																			1	
ring-billed gull	Larus delawarensis																			1	
Franklin's gull	Larus pipixcan								2	2		2								1	
Bonaparte's gull	Larus philadelphia																			1	
Forster's tern*	Sterna forsteri																			1	
black tern*	Chlidonias niger																	2	2	1	
band-tailed pigeon*	Columba fasciata				3											1		2			
rock dove	Columba livia																				1
white-winged dove*	Zenaidura asiatica	3	3	3					4	4		4		4		5		2	1	2	
mourning dove*	Zenaidura macroura	4	4	4	7	7	7	6	5	5	8	5	8	2	2	9	1	1	1	3	
ground dove*	Columbigallina passerina	3	3	3								4					2	1	1	2	
Inca dove	Scardafella inca	5	5	5		6	4	3	2	2	7	1	7				2	2	1	2	
yellow-billed cuckoo	Coccyzua americanus																	1	2		
roadrunner*	Geococcyx californianus																				1
groove-billed ani	Crotophaga sulcirostris								4	4		3					2	1	1		
barn owl*	Tyto alba	1	1	1														3	3	2	
screech owl	Otus asio																2	1	1		
great horned owl*	Bubo virginianus	2	2	2					2	2		2		3		4		1	1		
burrowing owl*	Speotyto cunicularia	3	3	3		5	5	4	2	2		2	4	2	1		6				
pygmy owl*	Glaucidium gnoma															3	2	1	1		
long-eared owl*	Asio otus	4	4	4		5	5	5	1	1	1	1	6	2	2		3				
short-eared owl*	Asio flammeus	4	4	4					1	1	2	1		3	2		3				
spotted owl	Strix occidentalis				3						3					2		1			
saw-whet owl	Aegolius acadicus				3						3					2		1			
whiskered owl	Otus trichopsis				3						4					2		1			
flammulated owl	Otus flammeolus				3						4					2		1			
elf owl	Micrathene whitneyi	1	1	1	2						4					3		2			
ferruginous owl	Glaucidium brasilianum	3	3	3													3	2	1		
whip-poor-will	Caprimulgus vociferus				3											4	2	1	1	2	
Ridgway's whip-poor-will	Caprimulgus ridgwayi				3						3					4	2	1	1	2	
poor-will*	Phalaenoptilus nuttallii	2	2	2	3				2	2	2	2				3	1	1	1	2	
common nighthawk*	Chordeiles minor	3	3	3	4	4	4	4	4	4	4	4	4	5	5	5	2	1	1	1	
lesser nighthawk*	Chordeiles acutipennis	3	3	3	4	4	4	4	4	4	4	4	4	4	4	5	2	1	1	1	

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white-throated swift*	Aeronautes saxatalis				3						4					3	2	1	1		
Vaux's swift	Chaetura vauxi															3		1	2		
black-chinned hummingbird*	Archilochus alexandri	6	6	6	3	3	3	4			5					5	2	1	1		
Costa's hummingbird*	Calypte costae	2	2	2	3				1	1	1	1	2	3	4		1				
Anna's hummingbird	Calypte anna				3						2						2	1	1		
broad-tailed hummingbird*	Selasphorus platycerus	4	4	4					3	3		3		4				1	2		
rufous hummingbird*	Selasphorus rufus	4	4	4	5	5	5		3	3	3	3		4	4		2	1	1		
calliope hummingbird	Stellula calliope	4	4	4	1						3					2		1			
Rivoli's hummingbird*	Eugenes fulgens	4	4	4	1						2					2		3			
blue-throated hummingbird*	Lampornis clemenciae				3						4					4	2	1	1		
broad-billed hummingbird	Cyanthus latirostris													4			3	1	2		
belted kingfisher*	Megaceryle alcyon																	1	2	3	
red-shafted flicker*	Colaptes cafer	5	5	5	4	5	5	6	5	5	4	5	6	6		3	2	1	1	6	
acorn woodpecker*	Melanerpes formicivorus	5	5	5	3			4	5	5	3					1		2	2		
Lewis' woodpecker	Asyndesmus lewis				3						3					1		2	2		
yellow-bellied sapsucker*	Sphyrapicus varius				3											3		1		2	
Williamson's sapsucker	Sphyrapicus thyroideus				2											2		1			
hairy woodpecker*	Dendrocopos villosus															2		1	2		
downy woodpecker	Dendrocopos pubescens				3											3		1	2		
ladder-backed woodpecker*	Dendrocopos scalaris	5	5	5	2						6			3	2	4		1	1	6	
eastern kingbird*	Tyrannus tyrannus	2	2	2					3	3		3	3	4			1	2	1		
western kingbird*	Tyrannus verticalis	3	3	3	6	6	6	5	4	4	7	4	7	3	2	8	2	1	1		
Cassin's kingbird*	Tyrannus vociferans	3	3	3	2				3	3	2	3		3		2	1	1	1		
scissor-tailed flycatcher	Muscivora forficata	1	1	1					2	2	2	2		3	3		4				
ash-throated flycatcher*	Myiarchus cinerascens	2	2	2	6	6	6	7	4	4	5	4	5	2	2	3	2	1	1	3	
eastern phoebe*	Sayornis phoebe																				1
black phoebe*	Sayornis nigricans																2	1	1	3	
Say's phoebe*	Sayornis saya	3	3	3	6	6	6	4	5	5	7	5	7	8	1	2	4	4	4	4	
Traill's flycatcher*	Empidonax traillii																2	3	1		
buff-breasted flycatcher	Empidonax fulvifrons				1						3					2		1		3	
Hammond's flycatcher	Empidonax hammondii																	1	2		
beardless flycatcher*	Camptostama imberbe	4	4	4	3												3	1	2		
dusky flycatcher	Empidonax oberholseri															3	2	1	1		

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gray flycatcher	Empidonax wrightii				2						3					1		2			
western flycatcher*	Empidonax difficilis				2						3			4		1		1	3		
Coues' flycatcher	Contopus pertinax				1						2					1		2			
western wood-pewee*	Contopus sordidulus	3	3	3	6						5			4		2		1	1	6	
olive-sided flycatcher*	Nuttallornis borealis	4	4	4	2						3			2		1				2	
vermilion flycatcher	Pyrocephalus rubinus																2	1	1	2	
horned lark*	Eremophila alpestris	4	4	4		8	8	2	1	1	8	1	4	3	7		6			5	
violet-green swallow*	Tachycineta thalassina							1			4			3	5	2		2			
tree swallow*	Iridoprocne bicolor															3		1	1	2	
bank swallow*	Riparia riparia	3	3	3														1	1	2	
rough-winged swallow*	Stelgidopteryx ruficollis													3				2	2	1	
barn swallow*	Hirundo rustica	4	4	4										3				2	2	1	
cliff swallow*	Petrochelidon pyrrhonota	3	3	3														1	1	2	
purple martin	Progne subis				2						3					1					
scrub jay*	Aphelocoma coerulescens	5	5	5	3			4			4					1		2			
Steller's jay*	Cyanocitta stelleri															2		1		2	
Mexican jay*	Aphelocoma ultramarina															1		2			
pinyon jay*	Gymnorhinus cyanocephalus				2	3	3				5					1		4			
Clark's nutcracker	Nucifraga columbiana															1		2			
common raven*	Corvus corax																				1
white-necked raven*	Corvus cryptoleucus							2	1	1		1		2		4	3	3	3		
common crow	Corvus brachyrhynchos																				1
mountain chickadee*	Parus gambeli				3						2					1					
Mexican chickadee	Parus sclateri				3						2					1					
plain titmouse*	Parus inornatus				2						3					1		4			
bridled titmouse*	Parus wollweberi															1	3	2	2		
verdin*	Auriparus flaviceps	4	1	4								5		4	2		3		3		
common bushtit*	Psaltriparus minimus	7	7	7	1	2		6			5			4		3	2	2	1		
black-eared bushtit	Psaltriparus melanotis				2											1					
white-breasted nuthatch*	Sitta carolinensis				2											1		3	4		
red-breasted nuthatch*	Sitta canadensis				2											1		3			
pygmy nuthatch	Sitta pygmaea				2											1		3			
brown creeper	Certhia familiaris															1		2			

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dipper*	Cinclus mexicanus				3													1	2		
house wren*	Troglodytes aedon																				1
Bewick's wren*	Thryomanes bewickii	4	4	4				2								1		3			
cactus wren*	Campylorhynchos brunneicapillus	5	5	5	1	1	1	3	6	6	7	6	6	5	2	7	4	5	4	8	
long-billed marsh wren	Telmatodytes palustris																	2	2	1	
canyon wren*	Catherpes mexicanus	5	5	5	1	1	1	4	6	6	3	6	6	7	7	2	2	2	2		
rock wren*	Salpinctes obsoletus	2	2	2	1	4	4	5	6	6	1	6	3			4	5	5	5		
mockingbird*	Mimus polyglottos																				1
catbird	Dumetella carolinensis																2	1	1	2	
brown thrasher*	Toxostoma rufum				2											1		1			
curve-billed thrasher*	Toxostoma curvirostre	4	4	4	4	4	4	5	5	5	4	5	5	2	1	6	3	3	3		
crissal thrasher*	Toxostoma dorsale	3	3	3	4	4	1	5	3	3		3		3	1	4	2	2	2		
Bendire's thrasher*	Toxostoma bendirei	1	1	1	2	2	2	2						1			3	3	3		
sage thrasher*	Oreoscoptes montanus				1	2	2	3								4					
American robin*	Turdus migratorius				3						4					2	5	1	1		
Townsend's solitaire*	Myadestes townsendi				2				4	4	1	4				3					
wood thrush*	Hylocichla mustelina				3											1		2			
hermit thrush*	Hylocichla guttata				3											1		2			
Swainson's thrush*	Hylocichla ustulata				3											1		2			
eastern bluebird	Sialia sialis				2						2					1					
western bluebird*	Sialia mexicana				2						2					1					
mountain bluebird*	Sialia curracoides								2	3	2	3				1	2	4			
blue-gray gnatcatcher*	Polioptila caerulea	3	3	3											4	2	1				
black-tailed gnatcatcher*	Polioptila melanura	2	1	2													2				
golden-crowned kinglet	Regulus satrapala				2						4					1		3			
ruby-crowned kinglet*	Regulus calendula	6	6	6			3				3					4	2	5		1	
water pipit*	Anthus spinoletta								3	3	3	3		4			4	2	2	1	
Sprague's pipit	Anthus spragueii								1	1	2	1					3				
cedar waxwing*	Bombycilla cedrorum				3											1	4	2			
phainopepla*	Phainopepla nitrens				1	4	4				3					2	6	5	5		
loggerhead shrike*	Lanius ludovicianus																				1
starling*	Sturnus vulgaris																				1
Bell's vireo*	Vireo bellii	5	5	5	6	6	6	7							4	7	2	3	1		

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Hutton's vireo*	Vireo huttoni				2						3					1					
gray vireo*	Vireo vicinior				2											1	2				
solitary vireo*	Vireo solitarius															2		1	3		
Philadelphia vireo*	Vireo philadelphicus																	1	1		
warbling vireo*	Vireo gilvus																	1	2		
black-and-white warbler	Mniotilta varia																2	1	1		
Tennessee warbler	Vermivora peregrina															2		1			
orange-crowned warbler*	Vermivora celata	6	6	6	4	5	5	3			5						2	1	1		
Nashville warbler*	Vermivora ruficapilla							2								3	2	1			
Virginia's warbler*	Vermivora virginiae				3											3	2	1	1		
Lucy's warbler*	Vermivora luciae																3	1	2		
parula warbler	Parula americana															2		1			
yellow warbler*	Dendroica petechia	4	4	4	4	4	4							4	4	4	3	1	2		
Myrtle warbler	Dendroica coronata										2					1		2			
Audubon's warbler*	Dendroica auduboni	1	2	2	5	5	5	5	6	6	4	6	6		5	5	4	4	4	3	
black-throated gray warbler*	Dendroica nigrescens				3						2					1			4		
Townsend's warbler*	Dendroica townsendi										2					3	1	2	2		
black-throated green warbler	Dendroica virens				2						3					1					
Grace's warbler*	Dendroica graciae				3											1		2		3	
ovenbird	Seiurus aurocapillus																2	1	1		
northern waterthrush	Seiurus noveboracensis																	2	2	1	
MacGillivary's warbler*	Oporornis tolmiei	4	4	4							5				3	3	1	2	2		
red-faced warbler	Oardellina rubrifrons				3						2					1					
Wilson's warbler*	Wilsonia pusilla	5	5	5	8			6			8			4		6	3	1	2	7	
American redstart	Setophaga ruticilla																3	1	2		
painted redstart	Setophaga picta				2						3					1					
yellowthroat	Geothlypis trichas																	2	2	1	
yellow-breasted chat	Icteria virens																3	2	1	3	
house sparrow	Passer domesticus																				1
eastern meadowlark	Sturnella magna	3						2	1	1	4	1		6	5						
western meadowlark*	Sturnella neglecta	3	4	4	7	7	7	2	1	1	4	1	4	6	5						
yellow-headed blackbird*	Xanthocephalus xanthocephalus											4		3				2	2	1	
red-winged blackbird*	Agelaius phoeniceus	3	3	3								3						1	1	2	

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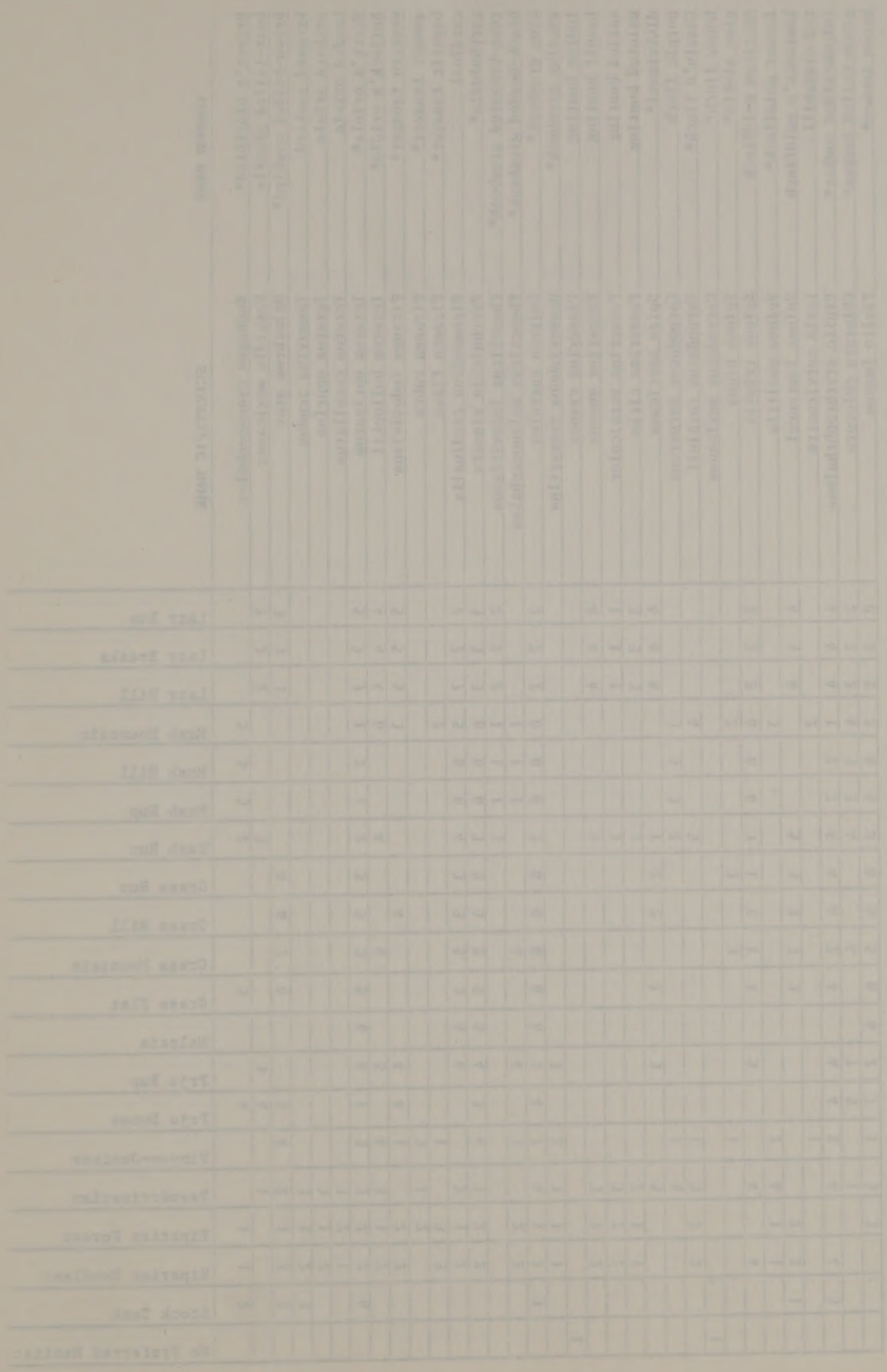
Brewer's blackbird*	Euphagus cyanocephalus				5	5	5	2				3			4			1	1	2	
boat-tailed grackle	Cassidix mexicanus	2	2	2				3						3	4		1				
brown-headed cowbird*	Molothrus ater	3	3	3					6	6	7	6			5	4	2	1	1	2	
bronzed cowbird	Tangavius aeneus																3	1	2	3	
orchard oriole	Icterus spurius																3	1	2		
hooded oriole	Icterus cucullatus																3	2	1		
Scott's oriole*	Icterus parisorum	5	7	7	1	2	1	2	5	5	3	5	6	6	1	3	3	2	2	4	
Bullock's oriole*	Icterus bullockii	4	4	4	6			4			6			5		4	3	1	2		
western tanager*	Piranga ludoviciana	5	5	5	3					4				4	4	1		2	2		
summer tanager*	Piranga rubra															3	1	2			
hepatic tanager*	Piranga flava				2											1		3	3		
cardinal	Richmondena cardinalis	7	7	7	5	6	6	4	3	3	5	3	4	4			2	1	1		
pyrrhuloxia*	Pyrrhuloxia sinuata	3	3	3	6	6	6	3	5	5	5	5	5	4	3	4	1	2	2		
rose-breasted grosbeak*	Pheucticus ludovicianus	2	2	2	1	1	1	3													
black-headed grosbeak*	Pheucticus melanocephalus				1	1	1				4			4		3		2	2		
blue grosbeak*	Guiraca caerulea	2	2	2	6	6	6	3	6	6	6	6	6	5	4	7	4	1	1	3	
evening grosbeak*	Hesperiphona vespertina													3		2	3	1	1		
indigo bunting	Passerina cyanea																				1
lazuli bunting	Passerina amoena	4	4	4				5									3	1	2		
varied bunting	Passerina versicolor	1	1	1				2									3	2	2		
painted bunting	Passerina ciris	3	3	3				3									2	1	1		
dickcissel*	Spiza americana	4	4	4				1	2	2		1		3			5				
purple finch	Carpodacus purpureus				3	3	3	2								1	4				
Cassin's finch*	Carpodacus cassinii				4			5								1	3	2	2		
house finch*	Carpodacus mexicanus																				1
pine siskin*	Spinus pinus				2				3		3					1					
American goldfinch	Spinus tristis	2	2	2	6	6	6	3	1	1	1	1		5			4		4		
lesser goldfinch*	Spinus psaltria				3											2	4	1	1		
Lawrence's goldfinch	Spinus lawrencei	4	4	4				5	3	3	3	3						2	2	1	
red crossbill	Loxia curvirostra				2											1					
rufous-sided towhee*	Pipilo erythrophthalmus	4	4	4	1	2	2	4	4	4	2	4		4	4	2	4		4	3	
green-tailed towhee*	Chlorura chlorura	2	2	2	4	3	3	4			6			7	5		1				
brown towhee*	Pipilo fuscus	8	8	8	2	8	4	8	6	6	5	6	6	7	7	1	3	3			



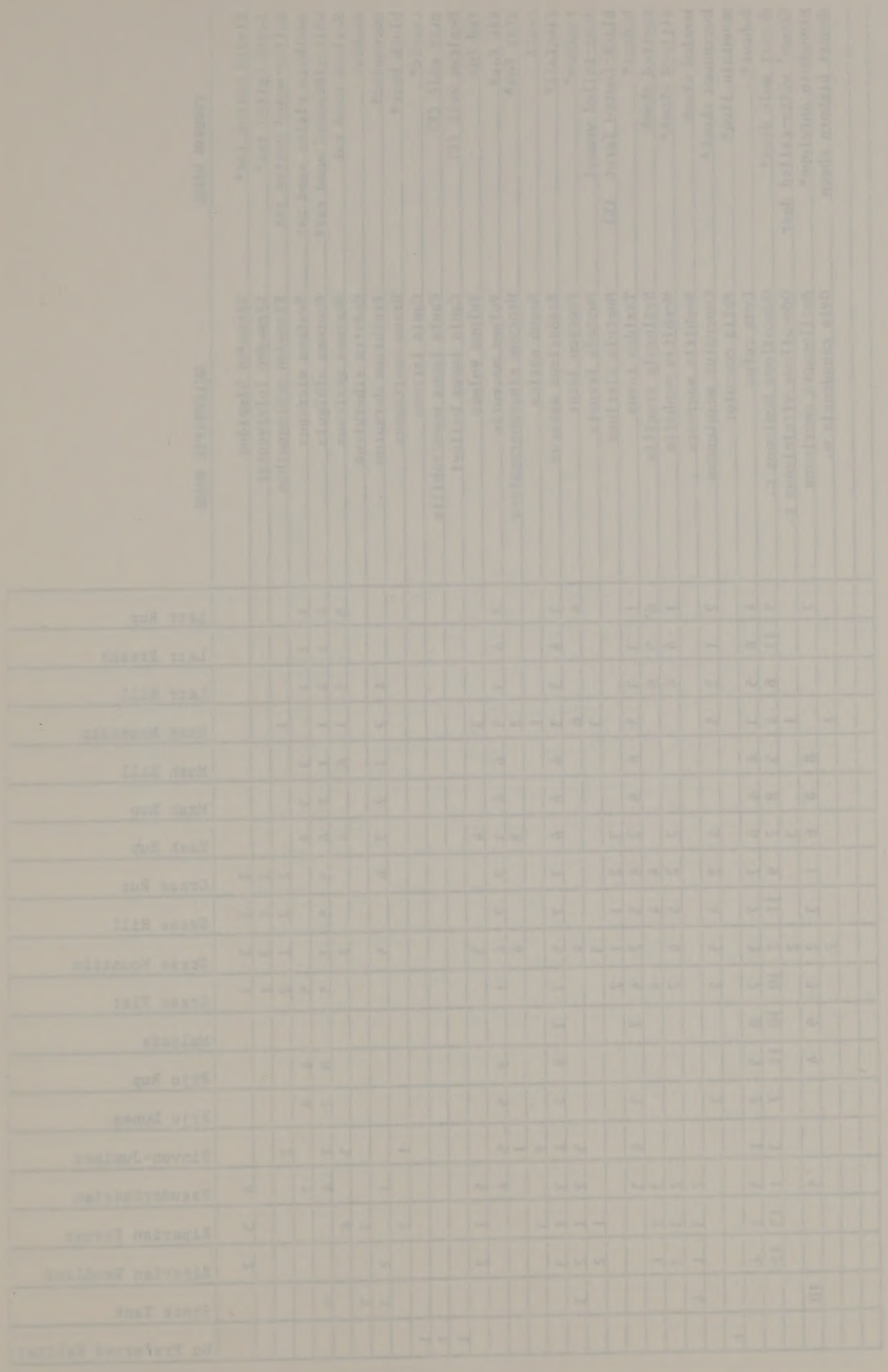
COMMON NAME	SCIENTIFIC NAME	Larr Rup	Larr Breaks	Larr Hill	Mxsh Mountain	Mxsh Hill	Mxsh Rup	Nash Rup	Grass Rup	Grass Hill	Grass Mountain	Grass Flat	Malpais	Prju Rup	Prju Dunes	Pinyon-Juniper	Pseudoriparian	Riparian Forest	Riparian Woodland	Stock Tank	No Preferred Habitat
lark bunting*	Calamospiza melanocorys	4	4	4	6	5	5	2	3	2		1	4	2	5						
savannah sparrow*	Passerculus sandwichensis	3	3	3				5	2	2	2	1						4	4		
Baird's sparrow	Ammodramus bairdii							2	1	1	1	1					3				
vesper sparrow*	Poocetes gramineus	3	4	3	5	5	5	1	2	2	3	2		6	7	7					
lark sparrow*	Chondestes grammacus	6	7	6	8	5	5	7	2	2	5	2	6	1					4	3	
rufous-crowned sparrow*	Aimophila ruficeps	8	8	8	4	5	5	5	4	4	1	4	4	2	9	3	7	6	6		
Botteri's sparrow*	Aimophila botterii	3	3	3				4	2	2		2	1				1				
Cassin's sparrow*	Aimophila cassinii	3	3	3					1	1	1	1		5			2			4	
black-throated sparrow*	Amphispiza bilineata	1	7	7	2	6	3	5	5	5	6	5	7	10	4	8	4	9	9	10	
sage sparrow*	Amphispiza belli				3	4	7		1	3	2	2		5		1		6	6		
grasshopper sparrow	Ammodramus savannarum							4	1	1	3	2					5				
Oregon junco*	Junco oreganus	6	6	6	4	5	5		6	6	1	7				1	3			2	
gray-headed junco*	Junco caniceps													2	3	1					
Mexican junco	Junco phaeonotus				2						3					1					
chipping sparrow*	Spizella passerina	3	3	3	7	8	8	4	8	8	7	8		9	5	6	10	1	1	2	
clay-colored sparrow	Spizella pallida	2	2	2				3	1	1	5	1	4				3				
Brewer's sparrow*	Spizella breweri	4	4	4				7	6	6		5		1	1				3	2	
black-chinned sparrow*	Spizella atrogularis				2						3					1					
Harris' sparrow*	Zonotrichia querula				2											1					
white-crowned sparrow*	Zonotrichia leucophyrs	5	5	5	10	6	6	7	9	9	10	8		5	3		2		4	1	
white-throated sparrow*	Zonotrichia albicollis	3	3	3		5	5		4	4		4							1	2	
fox sparrow*	Passerella iliaca				4						2					3		1			
field sparrow*	Spizella pusilla	2		2								1	3				4				
Lincoln's sparrow	Melospiza lincolnii	3	3	3				4									3	1	2		
swamp sparrow	Melospiza georgiana																	3	2	1	
song sparrow	Melospiza melodia																	2	1	3	
McCown's longspur	Rhynchophanes mccownii							3	2	2	1	2					4				
chestnut-collared longspur	Calcarius ornatus				4			2	1	1	1	1					3				

MAMMALS: Nomenclature in accordance with Burt and Grossenheider(1964) and Findley, Harris, Wilson, and Jones(1975).

COMMON NAME	SCIENTIFIC NAME	Latr Rup	Latr Breaks	Latr Hill	Mxsh Mountain	Mxsh Hill	Mxsh Rup	Hash Rup	Grass Rup	Grass Hill	Grass Mountain	Grass Flat	Malpais	Prju Rup	Prju Dunes	Pinyon-Juniper	Pseudoriparian	Riparian Forest	Riparian Woodland	Stock Tank	No Preferred Habitat
opossum	Didelphis marsupialis																3	1	2		
Merriam shrew	Sorex merriami				1						1				2						
vagrant shrew	Sorex vagrans				2						1							2			
gray shrew	Notiosorex crawfordii	3	3	3	2	4	4	4			2					2	1	1	1		
hog-nosed bat	Choeronycteris mexicana																				1
long-nosed bat	Leptonycteris navalis																				1
cave myotis	Myotis velifer																				1
Yuma myotis*	Myotis yumanensis	1	1	1																	
Arizona myotis	Myotis occultus																				1
fringe-tailed myotis	Myotis thysanodes																				1
Keen myotis	Myotis keeni																	1	1		
long-legged myotis	Myotis volans																				1
California myotis	Myotis californicus																	1	1		
long-eared myotis	Myotis evotis																1		1		
small-footed myotis	Myotis subulatus																	1	1		
silver-haired bat	Lasionycteris noctivagans				2						2						3	1	1		
western pipistrel	Pipistrellus hesperus																2	1	1	1	
big brown bat	Eptesicus fuscus																				1
red bat	Lasiurus borealis				2											4	3	1	1		
hoary bat	Lasiurus cinereus				2											4	3	1	1		
western yellow bat	Lasiurus ega				2											4	3	1	1		
spotted bat	Euderma maculatum																				1
western big-eared bat	Plecotus townsendii																				1
Mexican big-eared bat	Plecotus phyllotis				1						2					1		2			
pallid bat*	Antrozous pallidus	1	1	1													2	2	2		
Mexican free-tailed bat*	Tadarida brasiliensis																1	2	2		
pocketed free-tailed bat	Tadarida femorosacca																				1
big free-tailed bat	Tadarida molossa																				1
western mastiff bat	Eumops perotis																				1
eastern cottontail	Sylvilagus floridanus	7	7	7	1	2	2	2	5	5	3	5	7	6	4	1	1	5	5		
desert cottontail*	Sylvilagus audubonii	3	3	3	3	5	5	4	7	7	6	7	8	5	2	3	1	7	3	6	
black-tailed jackrabbit*	Lepus californicus	1	2	2	5	5	5	4	4	4	6	4	7	1	1	5	3	7	6		
Abert's squirrel*	Sciurus aberti																	1			

COMMON NAME	SCIENTIFIC NAME	Latr Rup	Latr Breaks	Latr Hill	Mxsh Mountain	Mxsh Hill	Mxsh Rup	Hash Rup	Grass Rup	Grass Hill	Grass Mountain	Grass Flat	Malpais	Prju Rup	Prju Dunes	Pinyon-Juniper	Pseudoriparian	Riparian Forest	Riparian Woodland	Stock Tank	No Preferred Habitat
cliff chipmunk*	Eutamias dorsalis				2											1					
gray-collared chipmunk	Eutamias cinereicollis				2											1					
Texas antelope squirrel*	Ammospermophilus interpres	1	1	1	2	3	3	4	5							1	1				
thirteen-lined ground squirrel*	Spermophilus tridecemlineatus	2	2	2	5	4	4	1	2	2	3	2									
spotted ground squirrel*	Spermophilus spilosoma	5	5	5		6	6	4	3	3		3		2	1		8	7	7		
rock squirrel*	Spermophilus variegatus	6	6	6	2	2	4	8			3					1	5	7	7		
golden-mantled ground squirrel*	Spermophilus lateralis				1						2					1					
Mexican ground squirrel	Spermophilus mexicanus	3	3	3		4	4	5				6		2	1	2					
black-tailed prairie dog	Cynomys ludovicianus							3	1	2	2	1									
white-tailed prairie dog	Cynomys gunnisoni							3	2	1	1	2									
valley pocket gopher	Thomomys bottae				2					3	1										
Bailey pocket gopher	Thomomys baileyi	1	2	1		3	3	4													
plains pocket gopher	Geomys bursarius				5	4	4	3	1	1	2	1									
Mexican pocket gopher	Pappogeomys castanops					5	5	3						2	1		4				
silky pocket mouse*	Perognathus flavus	3	5	3				4	2	2		1									
hispid pocket mouse*	Perognathus hispidus						4	4	1	2	3	2									
rock pocket mouse*	Perognathus intermedius	1	1	2				7	5	6	7	6	4			3	6				
desert pocket mouse	Perognathus penicillatus	4	4	4		6	6	6	5	5		5					2	3	1		
Apache pocket mouse	Perognathus apache				2	4					3					1					
Merriam's pocket mouse	Perognathus merriami				5	4	4	3	1	1	2	1		4							
Ord's kangaroo rat*	Dipodomys ordii	4	6	4				2	5	5	6	5		3	1		7				
Merriam's kangaroo rat*	Dipodomys merriami	1	2	1	7	5	5	4	6	6	7	6	8	5	3		5				
banner-tailed kangaroo rat*	Dipodomys spectabilis				3			2	1	1	1	1				5	4				
plains harvest mouse*	Reithrodontomys montanus					5	5	4	2	2	3	1	6								
western harvest mouse*	Reithrodontomys megalotis	4	6	4	6	6	6	4	2	2	3	1				5					
cactus mouse*	Peromyscus eremicus	3	4	1	5	4	2	2	3	3	4	3	3	6	7	8					
deer mouse*	Peromyscus maniculatus	2	2	2	7	7	7	3	1	1	11	1	7	6	4	5	8		10	9	
white-footed mouse*	Peromyscus leucopus	4	4	4				3	1	1	3	1				2	5		4		
brush mouse*	Peromyscus boylii				4						3					1	2	2	2		
pinyon mouse*	Peromyscus truei								4	3	2	4				1					
rock mouse*	Peromyscus difficilis	3	3	3					2	2		2	2	1							
northern grasshopper mouse*	Onychomys leucogaster	3	3	3			4	2	2	2		2		5	1		4				
southern grasshopper mouse*	Onychomys torridus	1	1	1			4	2	3	3		3					4				

COMMON NAME	SCIENTIFIC NAME	Latr Rup	Latr Breaks	Latr Hill	Mxsh Mountain	Mxsh Hill	Mxsh Rup	Hash Rup	Grass Rup	Grass Hill	Grass Mountain	Grass Flat	Malpais	Prju Rup	Prju Dunes	Pinyon-Juniper	Pseudoriparian	Riparian Forest	Riparian Woodland	Stock Tank	No Preferred Habitat
hispid cotton rat*	Sigmodon hispidus								2	3	2	1					4	5	2		
least cotton rat*	Sigmodon fulviventer								2	2	3	1									
yellow-nosed cotton rat	Sigmodon ochrognathus				1				2	2	1	2				2					
southern plains wood rat	Neotoma micropus	1	2	1		3	3	4				5		4	6		2				
white-throated wood rat*	Neotoma albigula	4	4	4	1	1	2	6	5	5	3	5		8	2	7	4			8	
Mexican wood rat	Neotoma mexicana	5		5	1	6		4			2					3		6			
muskrat	Ondatra zibethicus																	1		2	
porcupine*	Erethizon dorsatum			4	2	7	2	7	6		5						1		2	3	
black bear*	Ursus americanus															1		2			
coyote*	Canis latrans																				1
gray wolf (E)	Canis lupus monstrabilis																				1
Mexican wolf (E)	Canis lupus baileyi																				1
red fox	Vulpes vulpes				3			4			3						5	1	2		
kit fox*	Vulpes macrotis	2	4	3	5	6	6	3	2	2	4	1		3	5	5	4				
gray fox*	Urocyon cinereoargenteus				2			3			4					1					
coati	Nasua narica				1											2		1			
ringtail*	Bassarisus astutus	3	4	3	3	6	6	6	7	7	5	7	7	4	2	4	3	1	3		
raccoon*	Procyon lotor	4			6						4					5	2	1	2	3	
long-tailed weasel	Mustela frenata				3						3							1	2		
black-footed feret (E)	Mustela nigripes							3	2	1	1	2									
badger*	Taxidea taxus	1	3	3	5	6	6	2	4	5	2	4	7		3	4	3				
spotted skunk	Spilogale gracilis	6	5	6					4	4		4					3	2	1		
striped skunk*	Mephitis mephitis	1	4	4				7	2	5	6	2					2	3	3		
hooded skunk	Mephitis macroura																2	3	1	4	
hog-nosed skunk*	Conepatus mesoleucus	2	1	2	5			4	2	4	5	2			3						
mountain lion*	Felis concolor																				1
bobcat*	Lynx rufus	4	6	5	3	4	4	6	7	7	3	7	8	3	2	1	5	4	4		
desert mule deer*	Odocoileus hemionus c.	5	11	6	4	5	8	7	9	11	2	10	10	11	7	3	1	13	12		
Coues' white-tailed deer	Odocoileus virginianus c.				1			3			2										
pronghorn antelope*	Antilocapra americana	7				8	8	6	1	3	2	3	9	4			5			10	
desert bighorn sheep	Ovis canadensis m.				1						2										



LEGEND

Standard Habitat Sites

1. Grass Hill	-	Grass Hill
2. Grass Mtn	-	Grass Mountain
3. Grass Rup	-	Grass Rolling Upland
4. Grass Flat	-	Grass Flat
5. Latr Rup	-	Larrea tridentata Rolling Upland
6. Latr Breaks	-	Larrea tridentata Breaks
7. Latr Hill	-	Larrea tridentata Hill
8. Mxsh Mtn	-	Mixed Shrub Mountain
9. Mxsh Hill	-	Mixed Shrub Hill
10. Mxsh Rup	-	Mixed Shrub Rolling Upland
11. Hash Rup	-	Half Shrub Rolling Upland
12. Malpais	-	Malpais
13. Prju Rup	-	Prosopis juliflora Rolling Upland
14. Prju Dunes	-	Prosopis juliflora Dunes
15. P-J	-	Pinyon-Juniper
16. Pseudo	-	Pseudoriparian
17. Rip Forest	-	Riparian Forest
18. Rip Woodld	-	Riparian Woodland
19. Stock Tank	-	Stock Tank

Factors Utilized In Determining Key Species

1 - Limited tolerance to environmental change
2 - Limited distribution dependent on environmental factors
3 - Declining population dependent on environmental factors

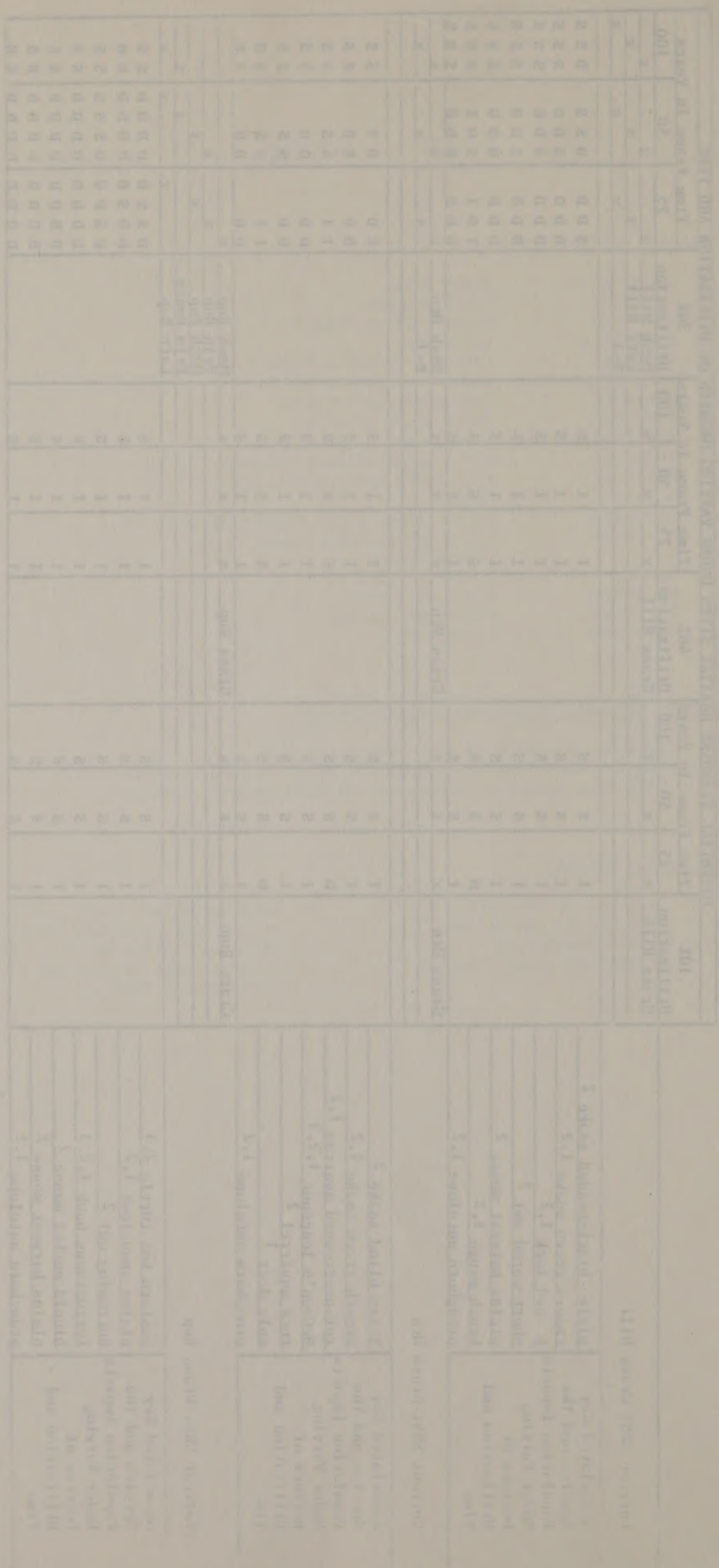
Population Indices

I - Increase in population
D - Decrease in population
S - Stable population
N - Species no longer present

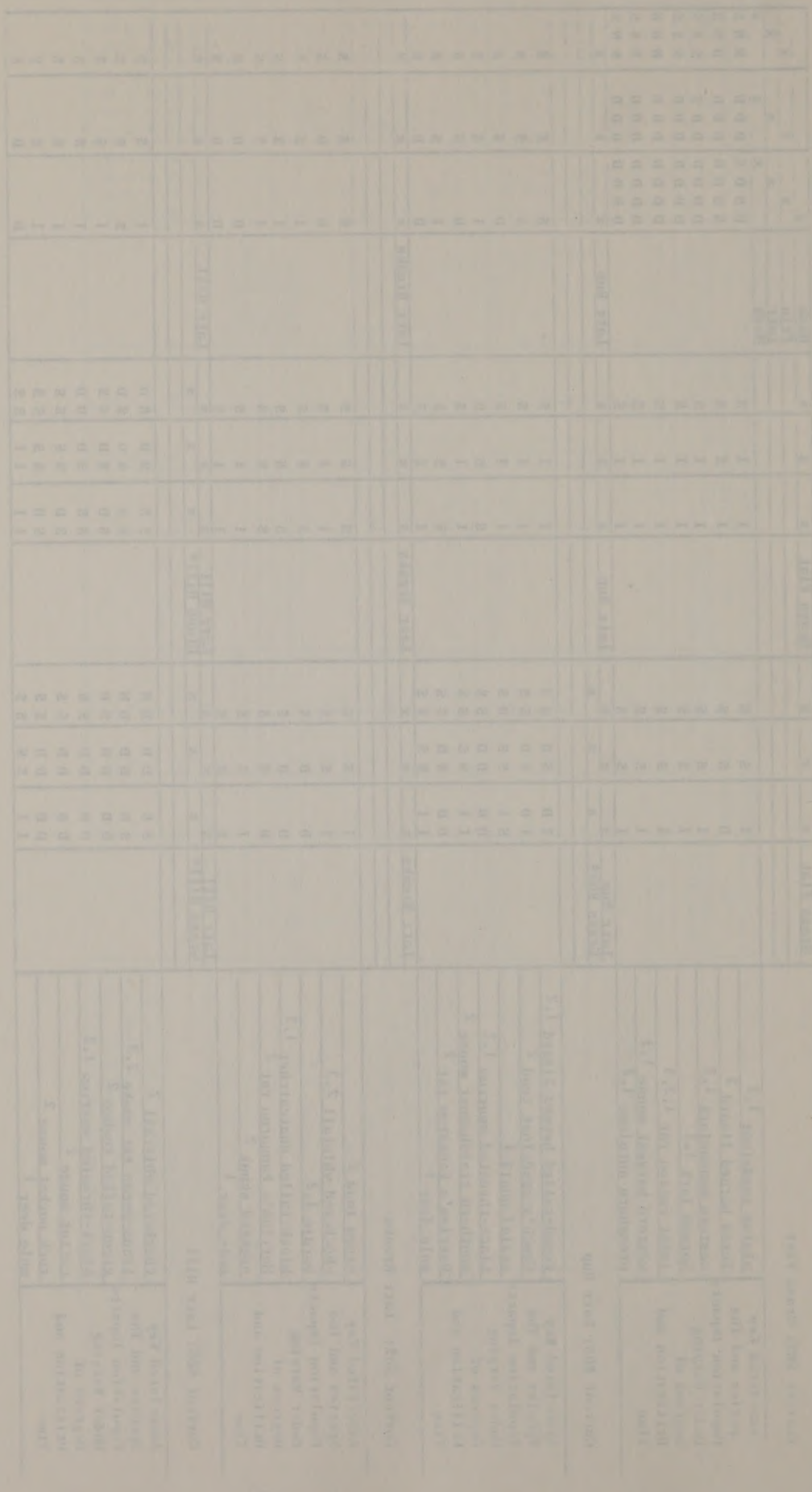
* Designates that a SHS could be converted to a grassland aspect through mechanical manipulation or possibly through discretionary use of fire as a management tool.

BLM, LAS CRUCES DISTRICT POTENTIAL STANDARD HABITATS UNDER VARYING DEGREES OF UTILIZATION AND TIME, AND THE RELATED POPULATION IMPACTS UPON KEY WILDLIFE SPECIES

		POTENTIAL STANDARD HABITAT SITES UNDER VARYING DEGREES OF UTILIZATION AND TIME											
		10% Utilization	Time Frame In Years 25	50	100	40% Utilization	Time Frame In Years 25	50	100	70% Utilization	Time Frame In Years 25	50	100
		Grass Hill	x	x	x	Grass Hill	x	x	x	Mxsh Hill	x	x	x
Current SHS: Grass Hill										Latr Hill	x	x	x
										P-J	x	x	x
Associated Key Species and The Population Impacts Under Varying Degrees of Utilization and Time	plain-black-headed snake [2]		I	S	S		I	I	S		S D D	D S S	D S S
	smooth green snake [1,2]		I	S	S		I	I	S		D D D	S D D	S S S
	h rned lark [1,2]		I	S	S		I	I	S		D D D	S D D	S S S
	short-cared owl [2]		I	S	S		I	I	S		D D D	S D D	S S S
	plains harvest mouse [2]		I	S	S		I	I	S		D D D	D D D	S S S
	brush mouse [1,2]		D	S	S		S	S	S		I D I	S D I	S N S
	pronghorn antelope [1,2]		I	S	S		I	I	S		D D D	D D D	S N S
		Grass Mtn	x	x	x	Grass Mtn	x	x	x	Mxsh Mtn	x	x	x
Current SHS: Grass Mtn										P-J	x	x	x
Associated Key Species and The Population Impacts Under Varying Degrees of Utilization and Time	Texas blind snake [2]		I	S	S		I	I	S		S D	D S	S S
	smooth green snake [1,2]		I	S	S		I	I	S		D D	S D	S S
	rufous-crowned sparrow [1,2]		D	S	S		S	S	S		I I	S S	S S
	McCown's longspur [1,2,3]		I	S	S		I	I	S		D D	D D	S S
	rock squirrel [2]		I	S	S		I	I	S		D D	S S	S S
	mule deer [1]		D	S	S		S	S	S		I I	S S	S D
	pronghorn antelope [1,2]		I	S	S		I	I	S		D D	D D	S S
		Grass Rup	x	x	x	Grass Rup	x	x	x	Hash Rup	x		
										Prju Rup	x	x	
Current SHS: Grass Rup										Mxsh Rup	x	x	
										Prju Dunes	x	x	x
										Latr Rup	x	x	x
Associated Key Species and The Population Impacts Under Varying Degrees of Utilization and Time	western box turtle [2,3]		I	S	S		I	I	S		D S S D	D D D D	S S
	plains spadefoot [1,2]		I	S	S		I	I	S		D D S D	D D D D	N N
	burrowing owl [2]		I	S	S		I	I	S		D S D D	D S S S	S S
	ferruginous hawk [1,2,3]		I	S	S		I	I	S		D D D D	D D D D	S S
	hispid pocket mouse [2]		I	S	S		I	I	S		D D D D	D D D D	S S
	plains harvest mouse [2]		I	S	S		I	I	S		D D D D	D D D D	N S
	pronghorn antelope [1,2]		I	S	S		I	I	S		D D D D	D D D D	N N

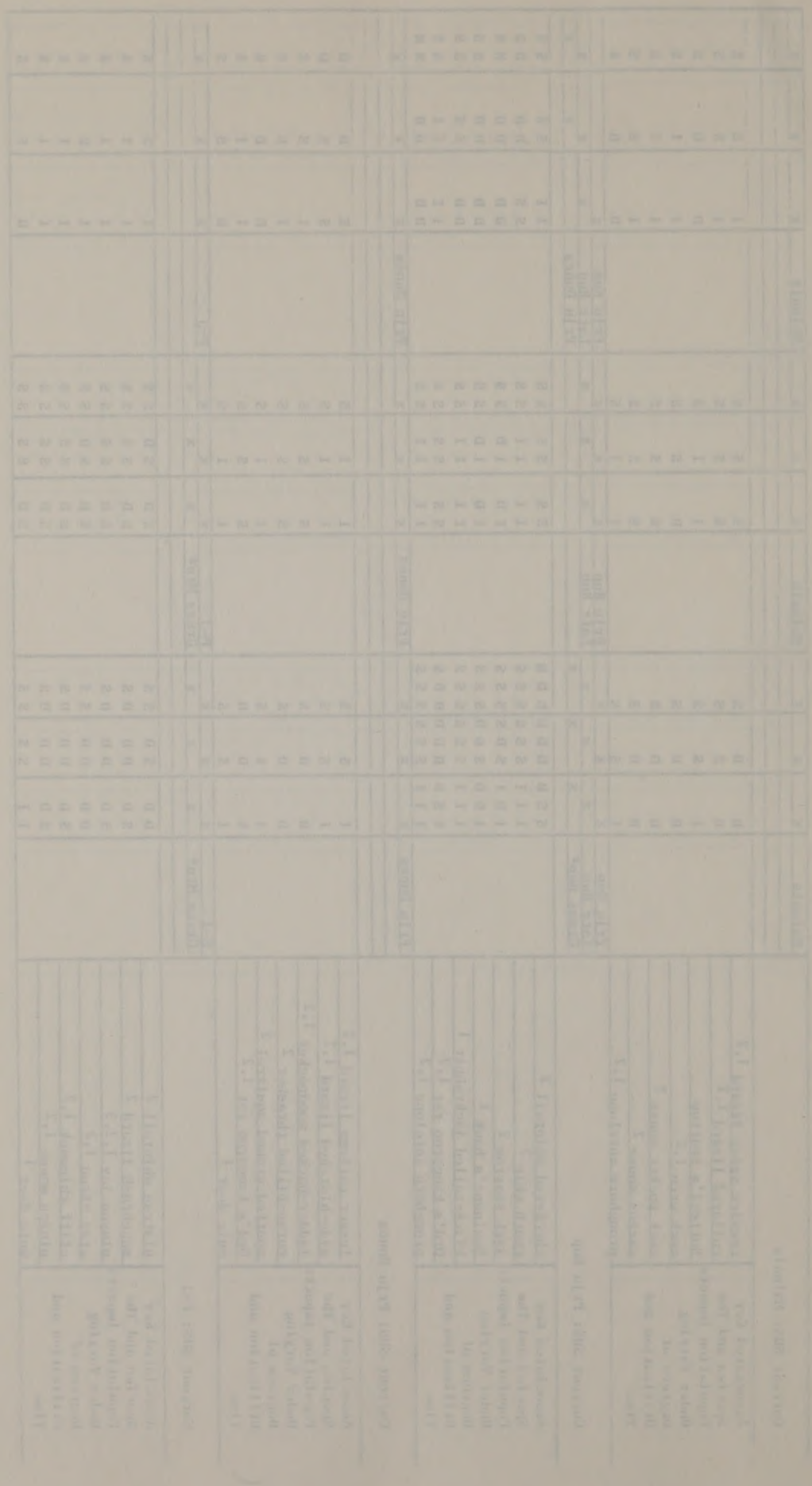


Current SHS: Grass Flat		Grass Flat	x	x	x	Grass Flat	x	x	x	Wash	x		
										Prju	x	x	x
										Latr	x	x	x
										Mxsh	x	x	x
Associated Key Species and The Population Impacts Under Varying Degrees of Utilization and Time	plains spadefoot [1,2]		I	S	S		I	I	S		D S D S	D D D	N N S
	Texas horned lizard [2]		D	S	S		I	S	S		S S D D	D D D	D S S
	western meadowlark [1,2]		I	S	S		I	I	S		D D D D	D D S	S S S
	horned lark [1,2]		I	S	S		I	I	S		D D D D	D D D	S S S
	least cotton rat [1,2,3]		I	S	S		I	I	S		D D D D	D D D	N N N
	western harvest mouse [1,3]		I	S	S		I	I	S		D D D D	D D D	S S S
	pronghorn antelope [1,2]		I	S	S		I	I	S		D D D D	D D D	S N S
Current SHS: Latr Rup		Latr Rup	x	x	x	Latr Rup	x	x	x	Latr Rup	x	x	x
		Grass Rup*	x	x	x								
Associated Key Species and The Population Impacts Under Varying Degrees of Utilization and Time	round-tailed horned lizard [1,2]		I D	S D	S S		I	I	S		S	S	S
	Couch's spadefoot toad [2]		I D	S D	S S		I	I	S		S	S	S
	scaled quail [1]		S I	S S	D S		I	I	S		D	S	S
	black-throated sparrow [1,2]		D D	D D	S S		S	S	D		I	S	S
	southern grasshopper mouse [2]		I I	S S	S S		I	I	S		D	S	S
	Merriam's kangaroo rat [2]		D D	S D	S S		S	S	S		I	S	S
	mule deer [1]		I I	S S	S S		I	I	S		D	D	S
Current SHS: Latr Breaks		Latr Breaks	x	x	x	Latr Breaks	x	x	x	Latr Breaks	x	x	x
Associated Key Species and The Population Impacts Under Varying Degrees of Utilization and Time	green toad [2]		I	S	S		S	S	S		S	S	S
	checkered whiptail [2,3]		I	S	S		I	I	S		D	D	S
	verdin [1,2]		D	D	S		S	S	S		I	S	S
	black-tailed gnatcatcher [1,2]		D	D	S		S	S	S		I	S	S
	Merriam's kangaroo rat [2]		D	S	S		S	S	S		I	S	S
	spotted skunk [2]		I	S	S		I	I	S		D	D	S
	mule deer [1]		I	S	S		I	I	S		D	D	S
Current SHS: Latr Hill		Latr Hill	x	x	x	Latr Hill	x	x	x	Latr Hill	x	x	x
		Grass Hill*	x	x	x	Grass Hill*	x	x	x				
Associated Key Species and The Population Impacts Under Varying Degrees of Utilization and Time	checkered whiptail [2]		S S	D D	D N		S S	S D	S D		I	S	S
	trans-pecos rat snake [2,3]		S D	D D	D N		S S	S D	S D		S	S	S
	green-tailed towhee [2]		D D	D D	S N		S D	S D	S S		I	S	S
	black-throated sparrow [1,2]		D D	D D	S S		S S	S D	D D		I	S	S
	cactus mouse [2]		D D	D D	S S		S D	S S	S S		I	S	S
	rock pocket mouse [2]		D D	D D	S S		S D	S S	S S		I	S	S
	mule deer [1]		I I	S S	S S		I I	I I	S S		D	D	S



Current SHS: Mxsh Mtn		Mxsh Mtn	x			x			x			Mxsh Mtn	x			x			x		
		Grass Mtn*		x			x			x		Grass Mtn*		x			x			x	
Associated Key Species and The Population Impacts Under Varying Degrees of Utilization and Time	rock rattlesnake [2,3]				D	D		D	D		S	N			S	D		S	S			I	I		S	S		S	S
	short-horned lizard [1,2]				I	I		S	S		S	S			I	I		S	S			D	D		S	S		S	S
	sage thrasher [2]				D	D		D	D		S	S			S	D		D	D			I	I		S	S		S	S
	common bushtit [1,2]				D	D		D	D		S	S			S	D		D	D			I	I		S	S		S	S
	white-throated woodrat [2]				D	D		S	S		S	S			S	D		S	D			I	I		S	S		S	S
	golden-mantled ground squirrel [2]				I	D		S	S		S	S			I	D		I	D			D	D		S	S		S	S
	mule deer [1]				I	I		S	S		S	S			I	S		I	S			D	D		D	D		S	S
Current SHS: Mxsh Hill		Mxsh Hill	x			x			x			Mxsh Hill	x			x			x		
		Grass Hill*		x			x			x		Grass Hill*		x			x			x	
		Latr Hill			x			x			x	Latr Hill			x			x			x	
Associated Key Species and The Population Impacts Under Varying Degrees of Utilization and Time	western black-headed snake [2]				I	D	D	S	D	S	S	S	S			I	D	D	I	S	D	S	S	S			D	D		D	D		S	D
	great plains toad [1,2]				I	D	S	S	D	S	S	S	S			I	D	D	I	S	S	S	S	S			D	D		S	D		S	D
	rufous-sided towhee [1,2]				D	D	D	S	D	D	S	D	S			S	D	D	D	S	S	D	S	S			I	S		S	S		S	S
	cactus wren [1,2]				D	D	D	S	D	D	S	D	S			S	D	D	D	S	S	D	S	S			I	S		S	S		S	S
	rock squirrel [2]				I	D	D	S	S	D	S	S	S			I	D	D	I	D	D	S	S	S			D	D		S	D		S	S
	white-throated woodrat [2]				D	D	D	S	S	D	S	S	S			S	D	D	S	D	D	S	S	S			I	S		S	S		S	S
	mule deer [1]				I	I	I	S	S	S	S	S	S			I	S	I	I	S	I	S	S	S			D	D		D	D		S	S
Current SHS: Mxsh Rup		Mxsh Rup	x			x			x			Mxsh Rup	x			x			x		
		Grass Rup*		x			x			x		Grass Rup*		x			x			x	
		Latr Rup			x			x			x	Latr Rup			x			x			x	
Associated Key Species and The Population Impacts Under Varying Degrees of Utilization and Time	western black-headed snake [2]				I	D	D	S	D	S	S	S	S			I	D	D	I	S	D	S	S	S			D	D		D	D		S	D
	great plains toad [1,2]				I	D	D	S	D	D	S	S	S			I	D	D	I	S	D	S	S	S			D	D		S	D		S	S
	Scott's oriole [1,2]				I	I	D	S	S	D	S	S	S			I	I	S	I	I	D	S	S	D			D	D		S	D		S	S
	aplomado falcon [1,2,3]				I	I	D	S	S	D	S	S	S			I	I	D	I	I	D	S	S	S			D	D		D	N		N	N
	cactus mouse [2]				D	D	I	S	S	S	S	S	S			S	S	I	S	S	I	S	S	S			I	D		S	S		S	S
	porcupine [2]				D	D	D	D	D	D	S	N	S			S	S	S	S	S	S	S	S	S			I	I		S	S		S	S
	mule deer [1]				I	I	I	S	S	S	S	S	S			I	S	I	I	S	I	S	S	S			D	D		D	D		S	S
Current SHS: Hash Rup		Hash Rup	x			x			x			Hash Rup	x			x			x		
		Prju Rup		x			x			x		Prju Rup		x			x			x	
		Latr Rup			x			x			x	Latr Rup			x			x			x	
																						Prju Dunes				x			x		
																						Latr Rup			x			x			x
Associated Key Species and The Population Impacts Under Varying Degrees of Utilization and Time	western whiptail [2]				I	S	D	S	S	S	S	S	S			I	S	D	I	S	D	S	S	S			S	S	D	D	D	D	D	S
	massasauga [2]				I	D	D	S	S	D	S	S	N			I	D	D	I	D	D	S	S	N			D	D	D	D	D	N	N	N
	lark bunting [2]				D	D	D	D	D	S	S	S	S			D	D	S	S	S	S	S	S	S			I	I	I	S	S	S	S	S
	Cassin's sparrow [1,2]				I	I	I	S	S	S	S	S	S			I	I	I	I	I	I	S	S	S			D	D	D	D	D	D	S	S
	thirteen-lined ground squirrel [1,2]				I	I	I	S	S	S	S	S	S			I	I	I	I	I	I	S	S	S			D	D	D	D	D	D	N	N
	northern grasshopper mouse [2]				S	S	S	D	D	D	D	D	D			S	S	S	S	S	S	S	S	S			I	I	I	I	I	I	S	S
	mule deer [1]				I	I	I	S	S	S	S	S	S			I	I	I	I	I	I	S	S	S			D	D	D	D	D	D	S	S

Current SHS: Malpais		Malpais	x	x	x	Malpais	x	x	x	Malpais	x	x	x
Associated Key Species and The Population Impacts Under Varying Degrees of Utilization and Time	crevice spiny lizard [1,2]		D	D	S		S	S	S		I	S	S
	collared lizard [1,2]		D	S	S		S	S	S		I	S	S
	Botteri's sparrow		I	S	S		I	I	S		D	D	S
	rock wren [1,2]		D	D	S		D	S	S		I	I	S
	rock pocket mouse [2]		D	D	S		S	S	S		I	S	S
	cactus mouse [2]		D	D	S		S	S	S		I	S	S
	pronghorn antelope [1,2]		I	S	S		I	I	S		D	D	S
Current SHS: Prju Rup		Prju Rup	x	x	x	Prju Rup	x	x	x	Prju Rup	x		
		Latr Rup	x	x	x	Latr Rup	x	x	x	Latr Rup	x	x	x
		Grass Rup*	x	x	x					Prju Dunes		x	x
Associated Key Species and The Population Impacts Under Varying Degrees of Utilization and Time	checkered whiptail [2]		S S D	D D D	D D N		S S	S S	S S		I I	S S	S S
	coach whip [2]		I I I	S S S	S S S		I I	I I	S S		S S	D D	D D
	lark sparrow [2]		I D I	S D S	S S S		I D	I D	S S		D D	D D	N N
	Swainson's hawk [1]		I D D	S D D	S S S		I D	I D	S S		D D	D D	S S
	black-tailed jackrabbit [1]		I I I	S S S	S S S		I I	I I	S S		D D	S S	S S
	Ord's kangaroo rat [1,2]		S S D	D D D	D D S		S S	S S	S S		I I	1 I	S S
	pronghorn antelope [1,2]		I I I	S S S	S S S		I I	I I	S S		D D	D D	N N
Current SHS: Prju Dunes		Prju Dunes	x	x	x	Prju Dunes	x	x	x	Prju Dunes	x	x	x
Associated Key Species and The Population Impacts Under Varying Degrees of Utilization and Time	lesser earless lizard [1,2]		I	S	S		I	I	S		S	D	D
	side-blotched lizard [1,2]		I	S	S		I	I	S		S	S	D
	ladder-backed woodpecker [1,2]		D	D	S		S	S	S		I	S	S
	curve-billed thrasher [2]		D	D	S		S	S	S		I	S	S
	spotted ground squirrel [2]		I	S	S		I	I	S		D	D	S
	Ord's kangaroo rat [1,2]		S	D	D		S	S	S		I	I	S
	mule deer [1]		I	S	S		I	I	S		D	S	S
Current SHS: P-J		P-J	x	x	x	P-J	x	x	x	P-J	x	x	x
		Grass Mtn*	x	x	x	Grass Mtn*	x	x	x				
Associated Key Species and The Population Impacts Under Varying Degrees of Utilization and Time	plateau whiptail [2]		D D	S D	S S		S D	S D	S S		I	S	S
	sagebrush lizard [2]		S D	D D	D S		S D	S S	S S		I	I	S
	pinyon jay [1,2,3]		S D	D D	D S		S D	S S	S S		I	I	S
	gray vireo [1,2]		D D	D D	S S		S D	S D	S S		I	S	S
	cliff chipmunk [1,2]		S D	D D	D S		S D	S S	S S		I	I	S
	pinyon mouse [1,2]		S D	D D	D S		S D	S S	S S		I	I	S
	mule deer [1]		I I	S S	S S		S D	S S	S S		D	S	S



Current SHS: Pseudo		Pseudo	x	x	x	Pseudo	x	x	x	Pseudo	x	x	x
Associated Key Species and The Population Impacts Under Varying Degrees of Utilization and Time	New Mexican whiptail [2]		I	S	S		I	I	S		D	S	S
	western hognose snake [2]		I	S	S		I	I	S		D	D	S
	Traill's flycatcher [1,2]		I	S	S		I	I	S		D	D	S
	gambel's quail [2,3]		D	D	S		S	S	S		I	I	S
	desert cottontail [1]		I	S	S		S	S	S		D	S	S
	grey shrew [1,2]		I	S	S		S	S	S		D	S	S
	mule deer [1]		I	S	S		I	I	S		D	S	S
Current SHS: Rip Forest		Rip Forest	x	x	x	Rip Forest	x	x	x	Rip Forest	x	x	x
Associated Key Species and The Population Impacts Under Varying Degrees of Utilization and Time	canyon tree frog [1,2]		I	I	S		I	S	S		D	D	S
	black-necked garter snake [2]		I	S	S		I	I	S		D	D	S
	Lucy's warbler [1,2,3]		I	I	S		S	S	S		D	D	N
	summer tanager [1,3]		I	I	S		S	S	S		D	D	N
	ringtail [1,2,3]		I	I	S		S	S	S		D	D	S
	raccoon [1,2,3]		I	I	S		S	S	S		D	D	S
	mule deer [1]		I	S	S		I	I	S		D	D	S
Current SHS: Rip Woodld		Rip Woodld	x	x	x	Rip Woodld	x	x	x	Rip Woodld	x	x	x
Associated Key Species and The Population Impacts Under Varying Degrees of Utilization and Time	ringneck snake [1,2]		I	I	S		I	I	S		D	D	S
	woodhouse's toad [1,2]		I	S	S		I	S	S		D	S	S
	Bell's vireo [1,2]		I	I	S		S	S	S		D	D	S
	yellow-breasted chat [1,2]		D	D	S		S	S	S		I	I	S
	white-footed mouse [1,2,3]		I	I	S		S	S	S		D	D	S
	hooded skunk [1,2]		I	S	S		I	I	S		D	D	S
	mule deer [1]		I	S	S		I	I	S		D	D	S
Current SHS: Stock Tank													
Associated Key Species	yellow mud turtle [1,2]												
	leopard frog [1,2]												
	gadwall [1,2]												
	Wilson's phalarope [1,2]												
	porcupine (salting grounds)												
	western pipistrel [1,2]												
	mule deer [1]												

LEGEND

Standard Habitat Sites

1. Grass Hill	-	Grass Hill
2. Grass Mtn	-	Grass Mountain
3. Grass Rup	-	Grass Rolling Upland
4. Grass Flat	-	Grass Flat
5. Latr Rup	-	Larrea tridentata Rolling Upland
6. Latr Breaks	-	Larrea tridentata Breaks
7. Latr Hill	-	Larrea tridentata Hill
8. Mxsh Mtn	-	Mixed Shrub Mountain
9. Mxsh Hill	-	Mixed Shrub Hill
10. Mxsh Rup	-	Mixed Shrub Rolling Upland
11. Hash Rup	-	Half Shrub Rolling Upland
12. Malpais	-	Malpais
13. Prju Rup	-	Prosopis juliflora Rolling Upland
14. Prju Dunes	-	Prosopis juliflora Dunes
15. P-J	-	Pinyon-Juniper
16. Pseudo	-	Pseudoriparian
17. Rip Forest	-	Riparian Forest
18. Rip Woodld	-	Riparian Woodland
19. Stock Tank	-	Stock Tank

Factors Utilized In Determining Key Species

1 - Limited tolerance to environmental change
2 - Limited distribution dependent upon environmental factors
3 - Declining population dependent upon environmental factors

Population Indices

I - Increase in population
D - Decrease in population
S - Stable population
N - Species no longer present

* Designates that a SHS could be converted to a grassland aspect through mechanical manipulation or possible through discretionary use of fire as a management tool.

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